

1 VIRGINIA:

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2 IN THE CIRCUIT COURT OF THE CITY OF NEWPORT NEWS

3  
4 **CERTIFIED ORIGINAL**

5 COMMONWEALTH OF VIRGINIA (

6 ) INDICTMENT NO.:

7 -v- ( CR03051857-00

8 CARLOS ESTRELLA-PEREZ, )

9 Defendant. (

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EXCERPT OF PROCEEDINGS

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Newport News, Virginia

15

June 11, 2004

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Before:

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THE HONORABLE EDWARD L. HUBBARD, Judge

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22 TAYLOE ASSOCIATES, INC.

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EXHIBIT

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## I N D E X

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DEFENSE WITNESS: Direct Cross Redirect Voir Dire

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8 DEFENSE EXHIBIT: Identification Evidence

9 #10 - CV 23 23

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N2O EMISSIONS FROM AGRICULTURE IN THE UNITED STATES

3. *Constitutive and regulatory genes for the synthesis of the  $\beta$ -1,3-glucan backbone in *Aspergillus fumigatus**

4

15. *Leucosia* (Leucosia) *leucostoma* (Fabricius) (Fig. 15)

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www.english-test.net

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8. *What is the best way to increase the number of people who use a particular service?*

<sup>1</sup> See, for example, the discussion of the 'right to be forgotten' in the European Union's General Data Protection Regulation (GDPR), Article 17(1).

2. *What is the relationship between the two variables?*

<sup>2</sup> See, for example, the discussion of the relationship between the two in the introduction to *Philosophical Perspectives* 20, 2007.

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TAYLOE ASSOCIATES, INC.

1 (Excerpt of proceedings held June 6, 2004.)

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3 MR. GARDNER: The defense would call Doctor Chris  
4 Van Ee.

5 CHRIS ALAN VAN EE, Ph.D., Called as a witness on  
6 behalf of the Defendant, having first been duly sworn, was  
7 examined and testified as follows:

8 DIRECT EXAMINATION

9 BY MR. GARDNER:

10 Q. Doctor Van Ee, how are you today?

11 A. Fair, thank you.

12 Q. Can you please state your full name, and spell it?

13 A. Chris Alan Van Ee, C-H-R-I-S A-L-A-N V-A-N E-E.

14 Q. What is your current occupation?

15 A. I'm a bio-mechanical engineer, and I work Design  
16 Research Engineering, and I have an adjunct faculty  
17 position.

18 Q. What's the address of your current company, and  
19 what do they do?

20 A. We work out of Goli, Michigan, and we're a  
21 consulting firm. We provide technical engineering services  
22 to people who are interested in having the services who have  
23 contacted us. That could be anything from an investigation  
24 into an accident to looking at product performance. I've  
25 done things that even range from psychiatric hospitals to

1 where they're looking at safe ways to take care of patients  
2 who are trying to harm others.

3 Q. And what is your educational background in  
4 bio-mechanical engineering -- before that, what is your  
5 educational background, starting with college?

6 A. I have an undergraduate in mechanical engineering  
7 from Dorcks Colleges, Northwest Ohio, and then I went onto  
8 graduate school at Duke University in North Carolina, and  
9 there I received a Ph.D. from the Department of Bio-medical  
10 Engineering, but the lab I studied in is the orthopedic  
11 impact laboratory.

12 Q. Could you briefly describe what your professional  
13 background is in addition to what you're currently doing?

14 A. Yes, I've worked as a mechanical engineer. I've  
15 designed an assembly line program, and I've also designed  
16 trenchers and different frames for windows and doors. I  
17 worked for awhile as a mechanical engineer, and I got very  
18 interested in the human side of every one of those objects I  
19 worked on, how to keep people safe using a machine and the  
20 complex interactions between a person and the machine, and  
21 so I got interested in that and went and looked into  
22 bio-mechanical engineering for graduate school, and since  
23 then I've worked.

24 After graduating, I went to the University of  
25 Michigan as a faculty member there and studied hip injuries

1 and orthopedic ruptures, head injuries and a number of  
2 other -- actually also did a study on keeping pregnant  
3 occupants safe in car accidents. Those are a few of the  
4 projects I've worked on.

5 Q. Are you a member of any professional society,  
6 professional organizations?

7 A. Yes. I'm a member of the Society of Automotive  
8 Engineers, American Society of Bio-mechanics, Triple A  
9 Automotive Medicine, Society of American Automobile  
10 Automotive Medicine Group, also the American Society of  
11 Mechanical Engineers.

12 Q. Do a lot of those organizations deal with trying  
13 to improve safety with, for example, car seats?

14 A. That would be a good example of many of those  
15 organizations; yes, safety, particularly my membership in  
16 the area of those organizations concerning safety.

17 Q. Have you ever published in your field?

18 A. I have. My CV actually lists a number of  
19 publications. I published on cervical spine injury, on  
20 general impact in orthopedic bio-mechanics, but I have a  
21 number of peer review scientific articles as well as  
22 presentations I've made at Ford Motor Company, National  
23 Highway Traffic Administration and many different  
24 conferences throughout the nation.

25 Q. Has your work in bio-mechanical engineering been

1 recognized by the professional community?

2 A. It has. I actually have been involved in a number  
3 of projects that have been very well received and very well  
4 recognized. Two of the papers I wrote, one being the Best  
5 Paper Award for the Annual Car Crash Conference, which is an  
6 international conference that focuses on just car crash  
7 safety and human tolerance, and I have one -- twice I've  
8 been the author of the best paper there. One of those  
9 papers got an award among the whole society of engineers  
10 that publishes in 90 countries and has 84,000 engineers or  
11 members. One of the papers was the best contribution in  
12 safety for the entire year.

13 Q. You said "tolerance." Can you briefly describe  
14 what bio-mechanical engineering is without getting very  
15 detailed? We can get to that later, but, briefly, what is  
16 bio-mechanical engineering?

17 A. Bio-mechanical engineering is interested in how  
18 forces, external forces, interact with the human body, how  
19 injury is produced and ways of applying forces so injury is  
20 not produced. So, it's kind of how a construction engineer  
21 looks at steel or wood to build things. You have to know  
22 how it acts. We look at the human body from a structural  
23 standpoint, see how strong it is and how it acts and predict  
24 how it will happen.

25 Q. And I think you may have mentioned this briefly,

1 but you've taught in this field, or are currently teaching  
2 in this field?

3 A. Yes. I'm a faculty member of the State University  
4 and taught classes the last four semesters in the graduate  
5 program in bio-medical engineering.

6 Q. There's a difference between bio-medical  
7 engineering and bio-mechanical engineering?

8 A. That's right. I teach bio-mechanics in the  
9 bio-medical engineering school. Bio-medical engineering is  
10 actually a broader term. It includes people who designed  
11 the ultrasound machine, or it could be electrical engineers,  
12 could have been physiologists, other folks, but I'm  
13 specifically teaching bio-mechanics. That's my area of  
14 specialty.

15 Q. Have you ever qualified as an expert in the field  
16 of bio-mechanical engineering?

17 A. Yes, I have.

18 Q. Do you know if they were criminal cases or civil  
19 cases?

20 A. Two criminal cases.

21 Q. Two criminal cases, and in those cases your  
22 testimony was involving the effect of force on the human  
23 body?

24 A. Yes. They both had to do with how the body  
25 interacts with things around it and how it moves and how it

1 impacts, how does it act upon impact.

2 Q. Have you ever testified or been called upon as an  
3 expert in a civil case?

4 A. I have not testified in a civil case.

5 Q. Only criminal cases?

6 A. Right. I testified in court, and I testified by  
7 deposition on several cases.

8 Q. The cases you qualified for testimony, what states  
9 were those?

10 A. Michigan and Florida.

11 Q. Michigan and Florida. Are you doing any  
12 consultation currently?

13 A. Yes, I do actually. I work for a company who  
14 trains people for psychiatric hospitals or other places on  
15 how -- what to do if patients are attacking other patients  
16 or attacking a client, and they asked me to come in and help  
17 them evaluate their methods they use to try to intervene and  
18 stop this activity to make sure that the patients are still  
19 safe during this action, or at least that they are as safe  
20 as they possibly can be during the risk-taking activity.

21 Q. Have you ever given any presentations in your  
22 field?

23 A. Yes, I have. I presented numerous conferences and  
24 have also been asked to give talks to both medical and  
25 engineering people at different places; at the University,

1 for example, as well as conferences, the Ford Motor Company  
2 and National Highway Traffic Safety Administration which is  
3 part of the Department of Transportation.

4 MR. GARDNER: Please answer any questions  
5 Commonwealth may have.

6 VOIR DIRE EXAMINATION

7 BY MS. MUTH:

8 Q. Good afternoon.

9 A. Good afternoon.

10 Q. You received your doctoral degree four years ago;  
11 is that correct?

12 A. That's correct.

13 Q. And you have stated on your CV that you're an  
14 adjunct assistant professor. Is that a paid position or  
15 volunteer position?

16 A. It is. I receive payment for the course that I  
17 teach.

18 Q. And I think I have a copy -- is it the University  
19 of Michigan, is that correct, the Transportation Research  
20 Institute?

21 A. I worked there for awhile; that's true.

22 Q. Okay. Let me just flip back here. You worked  
23 there for awhile. Your current teaching position is Wayne  
24 State University?

25 A. That's correct

1 Q. And on their website they list an academic  
2 classification; School of Medicine, professors that are on  
3 their payroll and then their voluntary faculty; is that  
4 correct? Are you familiar with their website?

5 A. I haven't looked at it.

6 MS. MUTH: May I approach?

7 THE COURT: Uh-huh.

8 BY MS. MUTH:

9 Q. I'll give you this website page.

10 A. This is the School of Medicine. I'm in the School  
11 of Engineering.

12 Q. Is your job title one that's on the payroll or one  
13 that is a voluntary position in the School of Engineering,  
14 or if you're not aware --

15 A. I don't think I actually know the answer to that  
16 question. When I went to the consulting firm I was  
17 contacted and asked to help teach over there, and they said,  
18 "Here is the thing you have to fill out," and I had letters  
19 of reference submitted, and I went through the process, and  
20 the department chair at the time E-mailed me back and said,  
21 "You are an adjunct assistant professor, and you'll be  
22 teaching this course for this pay," and beyond that I don't  
23 know the details.

24 Q. Your primary focus since you received your degree  
25 is actually product safety and design; is that correct?

1       A.    Since I received my degree -- actually, the entire  
2 work I do -- that I did at the University of Michigan  
3 Transportation Research Institute and the work I do at Wayne  
4 State is basic bio-mechanics.

5       Q.    I'm just asking broadly your primary area of  
6 focus, given what you listed on your CV, is product safety  
7 and design?

8       A.    That's one of the areas; yes.

9       Q.    In fact, you described your professional  
10 specialization in your CV as, quote, "Impact bio-mechanics  
11 research to identify mechanisms of injury with application  
12 to product safety and design."

13      A.    Sure.

14      Q.    You also list in the CV your specific areas of  
15 focus; isn't that correct?

16      A.    That's true.

17      Q.    You list, quote, "Specific areas of focus include  
18 automotive and marine accidents, contact sports injuries,  
19 industrial machine accidents, and small power handtool  
20 injury investigation;" is that correct?

21      A.    That sounds right.

22      Q.    Where have you worked since receiving your degree?

23      A.    University of Michigan, Transportation Research  
24 Institute, and from there I went to Design Research  
25 Engineering, and about the same time I started my position

1 at Wayne State.

2 Q. And the website for the Transportation Research  
3 Institute lists their mission as, quote, "The development,  
4 application and integration of knowledge and new technology  
5 to advance safety and effectiveness of transportation;"  
6 isn't that correct? I have a copy of it if you want to see  
7 it.

8 A. That sounds consistent with --

9 Q. And all of your other work experience was  
10 pre-doctoral degree; is that correct?

11 A. The other jobs that I listed were before I  
12 received my doctorate; correct.

13 Q. Are you an expert in child abuse?

14 A. I'm an expert in bio-mechanics and how injury  
15 takes place in the human body.

16 Q. Or an expert in non-accidental trauma?

17 A. As far as accidental trauma versus inflicted  
18 trauma, I don't -- I'm an expert in how forces interact with  
19 the body. Those aren't engineering terms that we would use  
20 one way or the other. How does force act upon the body, and  
21 what are the impacts?

22 Q. Have you had any specific training in evaluating  
23 child abuse situations?

24 A. Other than the applicable bio-mechanics, but  
25 nothing specifically to abuse that would fall under that

1 abuse situation, no.

2 Q. You haven't had any specific training in that?

3 A. I've had specific training in bio-mechanics and  
4 anything where there's an impact with a part of the body,  
5 whether or not that impact was inflicted or whether the  
6 impact was a result of a car accident or whether they meant  
7 to drive into a telephone pole, those aren't things from a  
8 bio-mechanical standpoint that are necessarily delineated.

9 Q. Have you taken any training or have any experience  
10 with substantial -- with the specific subsection of child  
11 abuse known as "shaken baby impact syndrome"?

12 A. I have training in all of the mechanics that are  
13 the bases that people talk about, whether they talk about  
14 shaken baby impact syndrome and how to determine head  
15 injuries, how do they happen, what are the measures we use  
16 to predict injuries, what test devices to analyze.

17 Q. So, you've been to seminars that discuss all these  
18 things?

19 A. I've been trained in that impact area, specific  
20 training.

21 Q. With regard to shaken baby impact syndrome?

22 A. As it relates to -- I've never been to a seminar  
23 that said, "This is shaken baby impact syndrome only."

24 Q. Do you have a medical degree?

25 A. No, it's an engineering degree.

1 Q. And what professional experience do you have with  
2 children under the age of one?

3 A. I have the literature that's available on human  
4 tissue properties, so as their tissues are related, how they  
5 are related and --

6 Q. Which literature are you referring to?

7 A. Literature in bio-mechanics. We have literature  
8 on how children develop, how the tissue properties change  
9 over time, how their anthropology changes over time, how big  
10 the --

11 Q. Do you have any experience working with live  
12 children and specifically children under the age of one?

13 A. I have experience working with dummies and child  
14 seats. I have not had reason in my professional life to  
15 perform any testing or anything like that on a child who's  
16 under the age of one, but I have reviewed the literature on  
17 how to make a better dummy to represent such a kid.

18 Q. Okay. What experience do you have with child head  
19 trauma, children with head trauma?

20 A. Just what I previously outlined.

21 Q. And you said that you'd been qualified as an  
22 expert in bio-mechanics in two criminal cases; one in Miami,  
23 one in Florida; correct.

24 A. One in Florida.

25 Q. And one in -- was it Michigan.

1 A. Michigan.

2 Q. No civil trials?

3 A. I have not given court testimony for a civil  
4 trial.

5 MS. MUTH: Your Honor, I don't have any further  
6 questions at this time, but I'll have an objection to Mr.  
7 Van Ee being qualified as an expert in this case.

8 MR. GARDNER: Judge, If I could ask some more  
9 questions.

10 BY MR. GARDNER:

11 Q. Doctor Van Ee, how is it that what you do relates  
12 to -- there's been a lot of talk about children's safety.  
13 How is it that what you do relates to children and the  
14 impact and the way those impacts affect their bodies?

15 A. In bio-mechanical engineering you spend an  
16 enormous amount of time, and the Department of  
17 Transportation has funded this expense, to specifically find  
18 out how children get injured in car accidents. In order to  
19 do that you look at how forces interact with children.  
20 That's all based on a fundamental understanding of  
21 bio-mechanical engineering. There's numerous amounts of  
22 research, and what happens then is you take that research  
23 and take what's known, and you design a safer car seat.

24 If a bio-mechanical engineer didn't have an  
25 appreciation of how a kid was developed, how a kid was

1 formed, we wouldn't be able to design a safer car seat. You  
2 have to figure out how can you apply forces to stop this kid  
3 in this accident.

4 Q. So, you take known injuries -- you're talking  
5 about actual children who have been injured, and they know  
6 what the injuries are, and based on that you work back to  
7 figure out what happened?

8 A. That's generally how we start. The National  
9 Highway Traffic Safety Administration usually identifies an  
10 issue, and one of those is kids who are hit by airbags, and  
11 they'll do in-depth crash investigations. We did those. We  
12 would look at cars and analyze what happened. We have a  
13 full medical history.

14 I sat on a panel that reviewed the medical  
15 histories with clinicians as well as engineers, people who  
16 investigated the car, EMS personnel, and we all sit together  
17 and take all this data and compile it and try to figure out  
18 how does this injury happen, and how can we prevent that in  
19 the future, and unless, you know -- part of that is then  
20 understanding the injury itself, and so I have seen and  
21 reviewed many medical records actually of children who have  
22 been injured in real accidents and use that data to say,  
23 "How can we change things so they're not injured in the  
24 future?"

25 Q. Does the U.S. government in any way recognize any  
200

1 of this? Is this legislated by the government?

2 A. This is legislated. The National Highway Traffic  
3 Safety Administration, the focal point where this is coming  
4 out of, the Department of Transportation, the crabby dummy  
5 that was used in our evaluation, actually it's a legislative  
6 piece of equipment, and the standards that go with it are  
7 all part of federal motor vehicle safety standards.

8 Q. So, a car seat, for example, it can't be on the  
9 road in a car unless it's basically passed muster with the  
10 bio-mechanical engineers, what they have to say about it?

11 A. It has to pass the laws of the bio-mechanical  
12 engineers that help to put together.

13 Q. You're not a medical doctor; no one is suggesting  
14 that you're a medical doctor.

15 A. No, I do not treat patients.

16 Q. Your specialty focus is simply on the force that  
17 is exerted in certain situations on human body tissue and  
18 what that body tissue does in response; is that fair?

19 A. That's fair. The difference between myself and a  
20 medical doctor, a medical doctor is primarily concerned with  
21 treating patients and taking care of their well-being. What  
22 I focus on specifically is how people get hurt, how they're  
23 injured, and how can we stop that in the future?

24 So, we spend much more time looking at causation,  
25 in determining causation, and I have many, many years of

1 experience of training and looking at trying to figure out  
2 causation.

3 MR. GARDNER: If the Commonwealth has any further  
4 questions.

5 MS. MUTH: I don't have any further questions, but  
6 I would like to have an argument. I'd like to be heard  
7 regarding my objection to his qualification as an expert. I  
8 have two objections; I don't believe he has enough  
9 experience to be qualified as an expert in this case.

10 The case I'm going to cite is King versus Sours,  
11 252 Va. 71, 1996 case. It states that the record must show  
12 that the proffered expert witness has sufficient --

13 THE INTERPRETER: Your Honor, the interpreter  
14 needs to --

15 MS. MUTH: King versus Sours states, "The record  
16 must show that the proffered expert witness has sufficient  
17 knowledge, skill or experience to render him competent to  
18 testify as an expert on the subject matter of the inquiry."  
19 This witness received his doctorate four years ago. He's  
20 worked two places since that time, both of which focus on  
21 product performance in vehicles.

22 In the case of Combs versus Norfolk and Western  
23 Railway Company, 256 Va. 490, a 1998 Virginia Supreme Court  
24 case, the doctor -- the bio-mechanical engineer in that case  
25 was qualified, but he was also a medical doctor. He had his

1 medical degree in that case. Doctor Van Ee does not have a  
2 medical degree. I would ask on that basis he not be  
3 qualified as an expert in this case.

4 My second reason is that if he were allowed to  
5 testify as an expert in bio-mechanical engineering, that  
6 testimony is not relevant in this case. The witness's own  
7 description of his profession is that he has a  
8 specialization in identifying mechanisms of injury with  
9 application to product safety and design, and the fact that  
10 a witness is an expert in one field does not render him an  
11 expert in another field, even though the two fields may be  
12 closely related, and that case cite comes from Tazwell Oil  
13 Company versus United Virginia Bank, 243 Va. 94, a 1992  
14 case.

15 Your Honor, he's an expert in injuries having to  
16 do with product safety and design. I don't believe the  
17 defense counsel is alleging there was any kind of product in  
18 the household that was malfunctioning or dangerous. His  
19 experience is limited to product safety of automobiles. He  
20 doesn't have any specific training in non-accidental trauma  
21 or child abuse, no specialized training in accidents to  
22 children, to a child's anatomy or pediatrics.

23 The subject matter of this inquiry is what is the  
24 causation of injury to a seven-month-old child, Ezekyl  
25 Fermaintt, and the cause of his death, and that needs to be

1 determined by physicians, medical doctors. Therefore, the  
2 Commonwealth would object to Mr. Van Ee being qualified as  
3 an expert.

4 MR. GARDNER: With regard to the times of how long  
5 ago he received his Ph.D., I think that would clearly go to  
6 the weight this Court decides to give to his testimony when  
7 he does testify. Bio-mechanical engineers have qualified as  
8 experts in Virginia. In Bobby Combs versus Norfolk and  
9 Western Railway Company, 256 Va. 490, 1998, the expert was  
10 competent to render an opinion on the compression forces  
11 placed on plaintiff's spine.

12 He was not allowed to go a step beyond that and  
13 talk about other medical things, but we're not offering this  
14 expert to talk about child abuse or the cause of death or  
15 any such thing, but an issue that's been put forth in this  
16 case by the Commonwealth repeatedly is an issue about the  
17 amount of force to an infant's skull and what that force  
18 would do to that bone. There's perhaps nobody more  
19 qualified than this gentleman to help the Court to better  
20 understand.

21 THE COURT: There's got to be somebody more  
22 qualified --

23 MR. GARDNER: I mean his profession,  
24 bio-mechanical engineering, deals specifically with the  
25 forces that exist in nature and how those forces act on body

1 tissue.

2 THE COURT: -- no offense.

3 THE WITNESS: That's okay.

4 MR. GARDNER: So, we would ask the Court to allow  
5 him as an expert to testify again on the limited issue of  
6 the amount of force that can cause bone, to say, fracture,  
7 for example, and he doesn't need to go any further than that  
8 and doesn't intend to go any further than that. As he  
9 stated, his profession isn't concerned with where force came  
10 from or why it happened. Engineering is just simply to  
11 explain the physics of nature and why things happen.

12 THE COURT: Well, the requirements for expert  
13 testimony in Virginia have been watered down to a bare  
14 minimum threshold, and that minimum threshold appears to me  
15 to be just if it might aid the trier of fact, if the person  
16 has specialized knowledge that might aid the trier of fact,  
17 in some way on one of the issues applicable and relevant to  
18 one of the issues in the case.

19 I think he's qualified as a bio-mechanical  
20 engineer, probably as a mechanic, too. You're lucky, I mean  
21 there's no jury here, I don't have to worry about any of  
22 that. I can listen to what he has to testify to, and if I  
23 don't think it's relevant to an issue in the case then I  
24 just get rid of it. If I do, I'll give it the weight I  
25 think it's entitled to. Let him go ahead.

1 MR. GARDNER: May I approach the witness?

2 BY MR. GARDNER:

3 Q. Doctor Van Ee, I'm handing you a four-page  
4 document. Do you recognize that?

5 A. That's my CV.

6 Q. Is that current?

7 A. It's current.

8 MR. GARDNER: Judge, I would ask this be marked as  
9 Defense Exhibit 10.

10 (Defendant's Exhibit Number 10 was  
11 marked for identification and received  
12 into evidence.)

13 BY MR. GARDNER:

14 Q. Doctor Van Ee, can you -- I know you touched on it  
15 a little bit a minute ago, but can you explain again in a  
16 little more detail now what it is that bio-mechanical  
17 engineering does, what's involved?

18 A. Sure. Taking the principals of physics,  
19 mathematics and engineering and applying them to the human  
20 body, specifically my area is impact and orthopedic  
21 bio-mechanics, that impact on mechanics is what it sounds  
22 like; it's short duration loading events that would happen  
23 when two things collide; that's impact bio-mechanics, and  
24 it's, within the injury in the bio-mechanics realm, probably  
25 one of the most studies disciplines.

1                   We're very concerned -- one of the reasons I have  
2 a large automotive background is because there's a lot of  
3 energy within the United States for automotive safety, and  
4 the leading technology and leading injury reference is in  
5 the ways we determine about how injuries take place. I  
6 mean, that's where the action is from the standpoint we've  
7 got funding there to study it. That's how I received a  
8 fellowship to go to graduate school but it was application  
9 with automotive safety, but bio-mechanics as a whole is the  
10 human body and the engineering of it.

11               Q.    What type of tests bio-mechanical engineering do  
12 you typically use to arrive at conclusions?

13               A.    Typically --

14               THE COURT: Let's just get to what test he used  
15 and the conclusions to which he's about to testify.

16               MR. GARDNER: That's fine.

17               THE COURT: I don't need this esoteric stuff. I  
18 need to get to the meat of the matter.

19 BY MR. GARDNER:

20               Q.    Doctor Van Ee, what were you asked to do in this  
21 specific case?

22               A.    In this case I was asked to characterize a fall  
23 from a five-foot-six-inch individual, characterize the fall  
24 of the infant from this individual's arms onto a linoleum  
25 floor supported by a wood sub-floor, and put that fall in

1 the context of what I know of injury tolerance is and what  
2 injuries would be probable under that scenario.

3 Q. And did it seem unusual to become involved in  
4 matter like this?

5 A. It seemed like it was appropriate for me to  
6 address those issues.

7 Q. Now, is there a reliable way to make a  
8 determination about the force that would be exerted on say  
9 the back of the head from the fall such as you just  
10 described?

11 A. There is a reliable repeatable method accepted in  
12 the scientific community to look at exactly posterior  
13 loading on an infant's head, and it's using with the child  
14 restraint airbag interaction dummy termed "crabby dummy."  
15 I'm sure somebody has a sense of humor, but that dummy is  
16 used specifically to be placed in a rear-facing child seat  
17 in front of the airbag module on the passenger side of the  
18 car and look at how the air bag interacts with the posterior  
19 part of the head.

20 Actually the airbag rolls up to the back of the  
21 child seat, and the child seat comes on forward and hits the  
22 back of the head of the infant, and there was a big interest  
23 in the mid '90s when airbags became prevalent in  
24 automobiles, and these injuries began to show up with kids  
25 being hurt or killed from that impact interaction.

1 Q. I think earlier you said it was fair to say that  
2 your industry takes no injuries -- in other words, a car  
3 accident, infant in a car seat suffers skull fractures, for  
4 example, and then you are able in that to work backward to  
5 find out how much force was involved; is that fair?

6 A. That's right. That would be part of the  
7 reconstruction where you actually reproduce the conditions  
8 of the crash as opposed to an infant, and then you actually  
9 have a testing device capable of measuring what's happening.  
10 Then that test device measures the same thing under another  
11 scenario, the likely result in similar injuries.

12 Q. In the world of physics force is force, I mean;  
13 right? It's not whether a moving object becomes stationary.  
14 It doesn't really matter what causes it to become  
15 stationary?

16 A. It's the nature of that interaction.

17 Q. It's the nature of that interaction. Okay. What  
18 were you provided in this particular case to review to form  
19 your opinions and conduct your tests?

20 A. I was provided medical records, a briefcase  
21 summary, and Doctor Bush's testimony. That's what I  
22 remember off the top of my head. My reported references  
23 everything I reviewed for this case.

24 Q. Do you feel as though you've had enough material,  
25 you reviewed enough information that you would be able to

1 testify to a certain -- to a reasonable degree of scientific  
2 engineering certainty regarding the results of your test?

3 A. Yes. I can definitely discuss the -- characterize  
4 a fall from this height and put it in terms that we use to  
5 evaluate injury and if injury is probable or not probable  
6 under these conditions.

7 Q. All right, and did you base your -- other than the  
8 information that we provided for you, did you base your  
9 expertise, or your opinions I should say, on anything else,  
10 any literature or other information?

11 A. Yes. I had many articles I brought with me  
12 regarding the tolerance of the infant head and how injuries  
13 take place.

14 Q. If you could explain for the Court what --  
15 specifically, what did you do in this test in this case?  
16 What test did you conduct?

17 A. I used a computer exhibit in this process.

18 Q. Can you just describe it?

19 A. Sure. I took the crabby, six-month old dummy,  
20 which is a legislative piece of equipment that meets  
21 a number of calibration standards in order to be  
22 certified. That's the same dummy we use to investigate  
23 airbag accidents in posterior head loading of infants. I  
24 took that dummy and dropped it onto a linoleum floor with a  
25 wood sub-floor.

1           I had a five-foot-six-inch person hold the dummy  
2 in one arm, left arm, and allowed the dummy to fall back out  
3 of the left arm and hit on the posterior head onto this  
4 floor, and then inside this dummy are three accelerometers,  
5 and what accelerometers do is measure acceleration, and  
6 acceleration is the change of velocity with respect to time.

7           Two cars could be going 60 miles per hour, but one  
8 does it in five seconds, one in ten. Acceleration in five  
9 is much higher. So, acceleration is a measure of how fast  
10 something changes velocity. So, if a head comes and hits  
11 the floor, and it happens very quickly, you'll have high  
12 accelerations. If it happens very slowly, as if it landed  
13 on a pillow, you have lower accelerations.

14           So, measuring the acceleration gives me an idea of  
15 how fast that head is interacting with the floor. That's  
16 used to look at and find out what kind of forces for what  
17 type of head injury you could get.

18           Q. In the absence of heavy wind resistance or  
19 something like that, gravity is always the same; right?  
20 It's a constant in physics.

21           A. It only varies by about the fourth or fifth  
22 significant digit as you go in different parts of the United  
23 States.

24           Q. And based on those tests, are you able then to  
25 measure the deceleration or the force on say the infant

1 skull, or any object for that matter, hitting a linoleum  
2 floor, wood sub-floor, it's falling from say the midsection  
3 here of a person who's five-feet-six-inches?

4 A. Yes. I mean, I measured the acceleration in the  
5 three axis and then computed the result of the acceleration  
6 at the center of the head. What we could then use to  
7 compare two accelerations that we know caused or resulted in  
8 injuries, and the other scenario is where we know the full  
9 loading event.

10 Q. So, for example, you know the amount of G force?

11 A. G's are the level of acceleration. So, I know the  
12 level of acceleration for this particular impact.

13 Q. So, in a situation -- say in a car accident where  
14 you know the infant in a car seat suffered skull fractures  
15 and then you know the G's from reconstruction of that, then  
16 you're able to go back and say, well, in that case there  
17 were "X" amount of G's, and so anytime we see that amount of  
18 G force, there's a probability that he will have fracturing;  
19 is that fair?

20 A. That's fair. Reconstructing accidents where  
21 there's no injury to the infant and accidents where there is  
22 injury, and one of the first things you look at when you  
23 testify is is it predictive of injury versus non-injury. We  
24 construct a number of cases they've done there already and  
25 they are published, and that's why the government said,

1 "We're going to adopt this dummy and use it as a standard to  
2 evaluate infant car seats," because it's useful in  
3 predicting injuries and useful to determine what's going to  
4 happen.

5 Q. So, physical issues like bone, for example, have a  
6 certain tolerance level; is that right?

7 A. That's right.

8 Q. And when you exceed the threshold of the tolerance  
9 level --

10 MS. MUTH: I'm going to object to the leading.

11 MR. GARDNER: That's fine.

12 BY MR. GARDNER:

13 Q. Can you explain what tolerance levels mean in your  
14 profession?

15 A. Tolerance levels are how strong something is.  
16 Tolerance could be of a specific tissue or it could be of a  
17 structure. In the case of a head, it's typically a  
18 structure -- you're looking at the whole structure of the  
19 head, not just -- you could have a tolerance with just a  
20 piece of bone or you could have a tolerance of the  
21 structure. It's a different -- how strong is wood to how  
22 strong is a two-by-four, and in this case we have tolerances  
23 associated with the infant head, and that's what I used in  
24 those.

25 Q. Now, based on the standards in the industry, is

1 there a G level that beyond that level there's a probability  
2 of fracturing?

3 A. The National Highway Traffic Safety  
4 Administration, after reviewing many crash injury  
5 investigations as well as it papers written by experts  
6 within the field on what the injury tolerance should be  
7 because you need to have an injury tolerance of the  
8 six-month old. So, they first developed the dummy and had  
9 to have injury reference values for it. The National  
10 Highway Traffic Safety Administration reviewed all this  
11 material and came up with this 50 G or 390 K is appropriate  
12 tolerance for the six-month old --

13 Q. Fifty G's?

14 A. Fifty times gravity.

15 Q. Based on your test in this case, when crabby was  
16 dropped from the arms of the five-foot-six-inch male onto a  
17 linoleum floor with a hardwood or wood underneath, what were  
18 the G's you were reading from the crabby in your test?

19 A. Well over 100 G's.

20 Q. Now, I know that you're usually concise, but  
21 sometimes it's not entirely concise. Did you conduct the  
22 test several times?

23 A. Yes. Actually, I did a total of ten drops, and I  
24 have the data in all those drops if you're interested.

25 Q. Is that the G's? Is that the peak head

1 acceleration that I'm reading in your report here?

2 A. Peak acceleration of the G's; that is correct.

3 Q. I'm reading these numbers 145, 137, 135, 144.

4 These are the G's that you were reading from your crabby  
5 dummy, your crabby in your test, in that scenario?

6 A. That's correct. I do want to point out that the  
7 first four tests were exactly as I described with a  
8 five-foot-six three quarter-inch person with the crabby  
9 holding it. There were two tests conducted where I held the  
10 dummy, and let it fall out of my arm. I didn't want the  
11 Court to misunderstand that all ten are identical, but I did  
12 repeat the test multiple times.

13 Q. In your opinion, that 135 G's of force being  
14 exerted on your acceleration being considered on the infant  
15 skull, would you expect to see any fracturing at that level?

16 A. That G level is consistent with injury, consistent  
17 with injuries with reports, and would be unacceptable if I  
18 were designing a rear-facing child seat. We would say  
19 that's unsafe.

20 THE COURT: That's not exactly the question he  
21 asked you. It was kind of non-responsive. Do you want to  
22 try it again?

23 MR. GWYNN: Before we continue, actually what I  
24 thought from the presentation from the defense, the reason  
25 for this expert's presence here was not to talk about the

1 nature of the injuries that would be exposed or incurred but  
2 to talk about the forces, and Mr. Gardner says specifically  
3 this witness's testimony would be confined to the amount of  
4 force that would be used in this kind of case, amount of  
5 force present, and there was no representation that this  
6 witness would be talking about injury. So, this is way  
7 beyond the scope of what Mr. Gardner represented to this  
8 Court which is the subject matter of this witness's  
9 testimony.

10 MR. GARDNER: Judge, he testified to the standards  
11 used in the industry that they have taken known fractures,  
12 and that's how they come up with the --

13 THE COURT: I think he said injuries.

14 MR. GARDNER: I'm sorry.

15 THE COURT: I think he said injuries.

16 MR. GARDNER: Can I let him expound upon it?

17 THE COURT: You mean change his testimony? He  
18 just said quite clearly that it would result in injuries in  
19 response to your question about fractures. So, obviously he  
20 didn't respond positively to your question about fractures.

21 MR. GARDNER: Okay, but can he explain --

22 THE COURT: All I've heard him say so far is that  
23 he made some comparison with the data he collected to  
24 acceleration events that have been done in the past, I  
25 suppose empirical data gathered from those events which

1 resulted in injury. Isn't that what you said?

2 THE WITNESS: That's probably what I said. The  
3 injuries included skull fractures, subdural hematomas, and I  
4 have a listing of the types of injuries that those are.

5 THE COURT: So, I mean, I don't have enough  
6 background to get to this help that you're trying to make,  
7 and what about what Mr. Gwynn said? You only told me he was  
8 going to talk about the forces exerted.

9 MR. GARDNER: That's right.

10 THE COURT: Now, you've got him extrapolating from  
11 the forces to the injury.

12 MR. GARDNER: Judge, his testimony is what the  
13 force would be, and they know in the industry that forces  
14 above a certain number create certain injuries --

15 THE COURT: Now you're testifying for him.

16 MR. GARDNER: Well, I think that was his  
17 testimony.

18 THE COURT: I missed that. You've got to get more  
19 background if you're going to ask that kind of question.

20 MR. GARDNER: Can I have one minute?

21 BY MR. GARDNER:

22 Q. Doctor Van Ee, you talked about the force level of  
23 say 135 or the G level of 135 is what you observed in your  
24 test?

25 A. That's correct.

1 Q. Can you tell me what -- or the Court -- what that  
2 would translate into perhaps in more laymen's terms?

3 A. That would -- that's representative of a high --  
4 that's a serious impact for a head, particularly for an  
5 infant, and the way I know that that's a serious impact is  
6 because in places where we've actually reconstructed  
7 accidents in the automotive community, if you blow an airbag  
8 up in the back of the crabby dummy, the numbers look like  
9 what these drops look like --

10 THE COURT: See, that's the problem I have.  
11 You've got him testifying to a moving object hitting a  
12 stationary object, and the only thing I have heard him say  
13 so far is his acceleration events come primarily from these  
14 airbag studies, and that's motion of two objects that  
15 collide. So, I mean there's no foundation unless he's got  
16 some empirical data other than that.

17 MR. GARDNER: Could I have the expert respond to  
18 that?

19 BY MR. GARDNER:

20 Q. Doctor Van Ee, can you explain the significance of  
21 say the two moving objects in a car situation versus this  
22 situation?

23 A. Absolutely. That's one area where bio-mechanical  
24 engineers have actually made things a little more clearer  
25 for everybody or made that a simpler issue. If a head

1 strikes a fixed object like a floor or a table, or if the  
2 floor or table strikes a fixed head, or if they're both  
3 moving and hit each other, that's all a reference frame, and  
4 those are all on -- those would all be the absolute  
5 equivalent thing, and the only way you would know is if you  
6 continue measuring head acceleration, if you measure head  
7 acceleration and it was same for all three events and the  
8 impact point was the same for all three events, those events  
9 are identical from a bio-mechanical standpoint.

10 They're identical from an injury standpoint. If a  
11 head hits a fixed object or something -- that same fixed  
12 object moving hits a stationary head, that is the same  
13 thing, and so we're all moving.

14 THE COURT: The question is if they're both  
15 moving, is that the same thing?

16 THE WITNESS: Yes, it is, Your Honor. I  
17 apologize. Even if the table is moving and the head is  
18 moving and they come together and you still have the same  
19 accelerations then it's the same impact.

20 THE COURT: If I've got two cars moving, coming  
21 head on, and they're both doing 70 miles-an-hour and they  
22 hit head-on, that's the same impact of a car going 70  
23 miles-an-hour --

24 THE WITNESS: If the two cars weigh the same, yes.  
25 I mean if they're structurally the same.

1                   THE COURT: Let me ask you this; what if a car  
2 leaves Detroit going to Miami going 35 miles-an-hour?

3                   MR. GWYNN: Before we continue, I have a serious  
4 problem with this witness testifying. He already said he  
5 has no medical degree. I have a serious problem with this  
6 witness testifying about injuries. Again, what we were  
7 talking about as I understand it, what Mr. Gardner said, we  
8 can vouch the record for this, he said that the Commonwealth  
9 had raised a lot of question about the nature of the force  
10 necessary to cause these injuries.

11                  I don't agree with that. Let's assume that's  
12 true, and he wanted this witness to testify only about the  
13 force that he saw in the testing he conducted, and now what  
14 we're talking about is something far different as the Court  
15 correctly pointed out. Now he's talking about extrapolating  
16 from that probable injuries that might result.

17                  I think this witness already mentioned skull  
18 fractures and subdural hematomas. He's got no medical  
19 degree. That's a serious problem. First, this is beyond  
20 what Mr. Gardner said he was going to testify to, but,  
21 second, he's not qualified to testify to the nature of these  
22 injuries.

23                  THE COURT: Maybe it has no weight. I don't know  
24 where he's going at this point. He did say that you made a  
25 lot to do about force and the injury. So, he got the word

1       injury in the same sentence, so I'll let him go a little bit  
2       further, but I'm kind of non-plused at this moment, but go  
3       ahead.

4       BY MR. GARDNER:

5       Q.     Doctor Van Ee, is there -- in simple physics  
6       terms, is there a formula? Does force equal something in  
7       physics terms?

8       A.     Force equals mass times acceleration.

9       Q.     Now, you videotaped this test that you performed.  
10      In fact, all these tests you performed; is that correct?

11      A.     Yes, that's correct.

12      Q.     Do you have that tape with you today?

13      A.     It's in the courtroom in the back. I would be  
14      happy to get that to play to the Court.

15            MR. GARDNER: Judge, we'd like to show the actual  
16      test so that Doctor Van Ee, I think, can explain it a little  
17      bit better and the Court can see specifically what it is he  
18      did.

19            THE COURT: I know what he did. Dropped the child  
20      on the child's head from the height of a bent arm on a  
21      five-foot-six three quarter-inch man. I don't need to see a  
22      picture of it. I got that. I need to see the results and  
23      tie them up for me.

24            MR. GARDNER: I'll do that right now, Judge.

25            THE COURT: Isn't that what you did?

1                   THE WITNESS: That's the first part of the testing  
2 I did.

3                   THE COURT: I'm pretty well in on this.

4 BY MR. GARDNER:

5                   Q. Doctor Van Ee, when -- in your industry with  
6 infants in car seats and you exceed 50 G's of force  
7 acceleration on that head, that's considered a dangerous  
8 level; is that fair?

9                   A. I would say there's significant risk for injuries  
10 if you go over that number.

11                  Q. You base that on what?

12                  A. Reconstructions of real crashes and based on --  
13 there's two parts of it. There's the first, what we know  
14 about the adult heads that we have tested. These are  
15 cadavers. We also have a few data of actual infant cadavers  
16 where they measured the energy required to produce skull  
17 fracture.

18                  So, using those data and then scaling the adult  
19 data down based on properties and how they change through  
20 age, using that bit of bio-mechanical data along with real  
21 crash injury data, kids really hurt in cars, using the  
22 crabby dummy and saying if an airbag blows up in the back of  
23 the car seat, and this is the exact airbag that happened  
24 that indicates this case under this accident scenario, what  
25 numbers do you get?

1 You take two of them together, and you say, you  
2 know what, these are consistent and the numbers that are  
3 consistent with injury that we don't want to exceed here, if  
4 we stable 050 G's and below 390 head-injury criteria, then  
5 we feel that we're reasonably stating that if we exceed that  
6 there's significant risk for injury.

7 Q. And that's fatal injuries?

8       A.    Those include fatal injuries, and we have  
9    documented cases. I don't diagnose the injuries. I don't  
10   see the patient, but I look at medical reports, and I say,  
11   "These are the injuries that happened under this condition,  
12   and those injuries are consistent with what we see in this  
13   case."

14 Q. I'm not asking you to give a medical opinion, but  
15 were any of those injuries that you observed skull  
16 fractures?

17 A. Yes, five parietal skull fractures in airbag  
18 deployments.

19 MR. GARDNER: That's all the questions I have.  
20 Please answer any questions the Commonwealth has.

21 | CROSS-EXAMINATION

22 | BY MS. MUTH:

23 Q. . . You stated you use crabby dummies, not live  
24 humans, not primates, not cadavers even; correct? You're  
25 using dummies?

1 A. That's the best available.

2 Q. They are not bio-vitalic; they don't have blood  
3 flowing through them or actually live tissue, bone marrow,  
4 tendons, muscles.

5 A. I think people would say they are the most  
6 bio-vitalic that we have available.

7 Q. Yes or no?

8 A. Bio-vidality, is it pretty or not pretty? Could  
9 it be better? Things can always be improved.

10 Q. Doesn't have any of the things that I just stated;  
11 does it?

12 A. Repeat the second part. I was answering the first  
13 part.

14 Q. Do your crabby dummies have blood flowing through  
15 them?

16 A. No.

17 Q. Do they have bone marrow flowing through them?

18 A. No.

19 Q. Do they actually have live tissue?

20 A. No.

21 Q. Muscle tendons, any of those things?

22 A. No.

23 Q. They have a hinged neck; isn't that correct?

24 A. It's a butyl rubber neck, it's not hinged.

25 Q. Did you bring one with you today?

1           A.    No, they are not -- they're like \$25,000.00. I  
2 rent it. I can't bring it with me.

3           THE COURT: Now we've got a maintenance problem.

4 BY MS. MUTH:

5           Q.    Sir, isn't there peer review literature regarding  
6 side impact airbags and infants stating that it's not the G  
7 forces that kill but the rotation in the head, the whiplash  
8 effect, that actually kills the child in the cases you're  
9 citing?

10          A.    There are people that talk about rotation and  
11 translation. Rotational forces arise from the forces  
12 causing the translational. So, the U.S. government said,  
13 you know what, the best predictor is to use re-evaluate  
14 the -- the translational accelerations we measured, and  
15 there are a lot of very smart folks there. They spend a lot  
16 of time. They want the safest car seat out there. So,  
17 that's the safest predictor.

18          Q.    When you conducted this test were you made aware  
19 by the defense counsel that the defendant stated he tried to  
20 grab the legs of the child and hold onto those legs before  
21 the child fell to the floor, thus slowing the fall to the  
22 floor?

23          A.    I was not aware of that.

24          Q.    So, you didn't do that in your test; isn't that  
25 correct?

1       A.    In my test the dummy fell right over the top, I  
2 mean, holding the legs, and the dummy fell out of the arms  
3 as you probably observed in the movie.

4            MS. MUTH:  Thank you.  I don't have any further  
5 questions.

6            MR. GARDNER:  One quick follow-up.

7                    REDIRECT EXAMINATION

8    BY MR. GARDNER:

9       Q.    In your test, if the crabby dummy started to fall  
10 and you attempted to catch the legs but didn't do so, would  
11 that have any bearing on the effect of the results of your  
12 test?

13      A.    Seems like it may affect how far they rotated,  
14 whether they landed on the very apex of the head versus the  
15 back of the head, but as far as slowing the head down,  
16 unless you actively grabbed it and held it for a bit, I  
17 don't see that making any big difference.  It kind of  
18 affects the spin of it, but actually the downward motion of  
19 it, not a lot.

20            MR. GARDNER:  Thank you.

21            MS. MUTH:  No further questions.

22            THE COURT:  You can step down down.  Thank you.

23                    (Witness excused.)

24                    (Whereupon, the excerpt was concluded.)

25                    \* \* \* 0 \* \* \*

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COURT REPORTER'S CERTIFICATE

I, Susan A. Ronan, Court Reporter, certify that I  
recorded verbatim by stenotype the proceedings in the  
captioned cause before the Honorable Edward L. Hubbard,  
Judge of said Court, Newport News, Virginia, on June 11,  
2004.

8 I further certify that to the best of my knowledge  
9 and belief, the foregoing excerpt of transcript constitutes  
10 a true and correct transcript of the said proceedings.

Susan A. Roman / nee

Susan A. Ronan

Court Reporter

## Commonwealth v. Estrella-Perez

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## #10 - bio-mechanics

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2005 Mich. App. LEXIS 186

SHEPARD'S®  People v. Campbell

PEOPLE OF THE STATE OF MICHIGAN, Plaintiff-Appellee, v ANTHONY SCOTT CAMPBELL, Defendant-Appellant. PEOPLE OF THE STATE OF MICHIGAN, Plaintiff-Appellant, v ANTHONY SCOTT CAMPBELL, Defendant-Appellee.

No. 245263, No. 254807

COURT OF APPEALS OF MICHIGAN

2005 Mich. App. LEXIS 186

January 27, 2005, Decided

**NOTICE:** THIS IS AN UNPUBLISHED OPINION. IN ACCORDANCE WITH MICHIGAN COURT OF APPEALS RULES, UNPUBLISHED OPINIONS ARE NOT PRECEDENTIALLY BINDING UNDER THE RULES OF STARE DECISIS.

**SUBSEQUENT HISTORY:** Appeal denied by People v. Campbell, 2005 Mich. LEXIS 1028 (Mich., June 28, 2005)

**PRIOR HISTORY:** Branch Circuit Court. LC No. 01-017197-FC.

**DISPOSITION:** Accordingly, in Docket No. 254807, we affirm the trial court's grant of a new trial for Campbell. In Docket No. 245263, we affirm the trial court's denial of Campbell's motion to suppress his statements to the police. The case is remanded for further proceedings consistent with this opinion. We do not retain jurisdiction.

**CORE TERMS:** interview, new trial, trial counsel, tape, evidentiary hearing, custody, stairs, ineffective assistance of counsel, police station, recorded, ineffective, order granting, fall down, subjective, warnings, hire, standard of review, rationalize, arrested, expert witnesses, trier of fact, freedom of movement, abandoned, deprived, totality, murder, hiring, arrest, video, ended

**JUDGES:** Before: Whitbeck, C.J., and Owens and Schuette, JJ. SCHUETTE, J. (concurring).

**OPINION**

PER CURIAM.

I. Overview

The trial court convicted defendant Anthony Scott Campbell of second-degree murder<sup>1</sup> and sentenced him to 206 to 360 months' imprisonment. Campbell appeals as of right in Docket No. 245263. While Campbell's appeal was pending, this Court granted his motion to remand for an evidentiary hearing. Following the evidentiary hearing, the trial court granted Campbell a new trial. In Docket No. 254807, this Court granted the prosecution's application for leave to appeal the order granting Campbell a new trial, and consolidated the two appeals. We affirm the trial court's grant of a new trial for Campbell and remand for further proceedings.

----- Footnotes -----



<sup>1</sup> MCL 750.317.

----- End Footnotes-----

## II. Basic Facts And Procedural History

Campbell's conviction arises from the death of Paige Anderson, the ten-month-old daughter of Campbell's live-in girlfriend, Teri Anderson. In January 2001, the child was brought to the emergency room at the Community Health Center in Coldwater, Michigan and found to be in critical condition. She was not breathing, her eyes were fixed and dilated, and she was bruised across her forehead, on her left leg, below her clavicle, and on the side of her neck. The bruises were in various stages of healing. The sclera of the child's right eye was bleeding and both eyes exhibited retinal hemorrhaging. She was flown to another hospital for further assessment and treatment, but she did not survive. The cause of death was determined to be a severe craniocerebral trauma caused by a significant blow to the back of her head, which caused a skull fracture and swelling of the brain.

Campbell was in exclusive control of the child at the time she sustained her fatal head injury. He testified that, after two mishaps in the bathtub on the evening of January 5, 2001, he put the child to bed. He later received a call from Teri Anderson, who wanted to be picked up from work. Anderson was ill and wanted to see a doctor. According to Campbell, when he rushed out of his apartment, he was holding the child on his right side. As he stepped onto the second step of the stairs, his foot went out from underneath him and the child shot out of his arms. She landed on the back of her head on the fourth or fifth step. She continued moving, feet first, onto the landing where she rolled up to the railing and came to rest. Campbell testified that it appeared that the child banged her head against the wall during the fall, and her right lower back or stomach hit the railing.

The prosecution presented evidence that Campbell's version of the alleged fall had evolved over time. For example, Campbell initially informed the police that the child had fallen face-and chest-first onto the steps. Later, he indicated that she landed on the back of her head. More importantly, the prosecution presented evidence from several treating physicians, all of whom were qualified as experts at trial, and from the medical examiner, who performed the victim's autopsy. Their unrefuted testimony was that the child's injuries were inconsistent with a fall on the stairs. The medical experts agreed that the child's skull fracture was caused by an impact on a hard, flat surface. Some of the physicians testified that retinal hemorrhaging is indicative of abuse until proven otherwise. All of the experts admitted that their conclusions took into consideration the history of the alleged fall, as presented to them. The history was not the version to which Campbell testified at trial.

The trial court, sitting as the trier of fact, and relying primarily on the medical evidence, convicted Campbell of second-degree murder.

## III. The Prosecutor's Appeal Of The Order Granting A New Trial

### A. Standard Of Review

We review the trial court's decision to grant a motion for new trial for an abuse of discretion.<sup>2</sup>

----- Footnotes -----

<sup>2</sup> *People v Cress*, 468 Mich. 678, 691; 664 N.W.2d 174 (2003); *People v Johnson*, 245 Mich. App. 243, 250; 631 N.W.2d 1 (2001).

----- End Footnotes-----

### B. Ineffective Assistance Of Counsel

We first address the trial court's decision granting Campbell a new trial, which the prosecutor

challenges in Docket No. 254807. Following an evidentiary hearing, the trial court found that Campbell was deprived of the effective assistance of counsel in two crucial regards. Specifically, the trial court determined that trial counsel was ineffective for failing to contact, investigate, and urge Campbell to hire an expert to refute the medical testimony presented by the prosecution. The trial court found that, but for defense counsel's failure with respect to expert testimony, there was a strong likelihood that it would have acquitted Campbell. Additionally, the court found that trial counsel was ineffective for failing to produce police records from Iowa involving another one of Anderson's children. Campbell had no contact with this other child, who was found with bruising due to suspected physical abuse.

Whether a defendant was denied effective assistance of counsel presents a mixed question of fact and constitutional law.<sup>3</sup> This determination requires the trial court first to find the facts, then determine "whether those facts constitute a violation of the defendant's constitutional right to effective assistance of counsel."<sup>4</sup> We review the trial court's factual findings for clear error and review *de novo* its constitutional determination.<sup>5</sup> To prevail on a claim of ineffective assistance of counsel, a defendant must show that counsel's performance fell below an objective standard of reasonableness and that, but for defense counsel's errors, there was a reasonable probability that the result of the proceeding would have been different.<sup>6</sup> We presume that counsel provided effective assistance, and defendant bears a heavy burden of demonstrating that counsel was ineffective.<sup>7</sup>

----- Footnotes -----

<sup>3</sup> *People v LeBlanc*, 465 Mich. 575, 578; 640 N.W.2d 246 (2002).

<sup>4</sup> *Id.* at 579.

<sup>5</sup> *Id.*

<sup>6</sup> *People v Stanaway*, 446 Mich. 643, 687-688; 521 N.W.2d 577 (1994).

<sup>7</sup> *People v Williams*, 240 Mich. App. 316, 331; 614 N.W.2d 647 (2000).

----- End Footnotes -----

Decisions regarding what evidence to present and whether to call witnesses are presumed to be matters of trial strategy.<sup>8</sup> However, the failure to call significant witnesses without articulating any strategic reason for doing so may constitute ineffective assistance of counsel.<sup>9</sup> The failure to call witnesses is ineffective if it deprives a defendant of a substantial defense.<sup>10</sup>

----- Footnotes -----

<sup>8</sup> *People v Rockey*, 237 Mich. App. 74, 76; 601 N.W.2d 887 (1999).

<sup>9</sup> *People v Johnson*, 451 Mich. 115, 122-124; 545 N.W.2d 637 (1996).

<sup>10</sup> *People v Daniel*, 207 Mich. App. 47, 58; 523 N.W.2d 830 (1994).

----- End Footnotes -----

At the evidentiary hearing, Campbell presented **testimony** from two **expert** witnesses, **Chris Van Ee**, a Ph.D. in biomechanical engineering, and **Dr. Ronald Uscinski**, a clinical neurosurgeon. Van Ee concluded that a fall down the stairs, in the manner described by Campbell, would produce a violent impact to the back of the victim's head and could result in a skull fracture. Dr. Uscinski testified that, if the child's fall occurred in the manner described by Campbell at trial, the injuries she sustained could have resulted. He testified that medical science cannot distinguish between an intentional slamming of the head and an accidental drop on the head. He disagreed that retinal hemorrhaging is indicative of intentional abuse.

Campbell's trial counsel testified that there was no strategic reason for failing to investigate and hire an expert. Although Campbell was aware that there were nine physicians testifying for the prosecution, he believed he could adequately cast doubt on their testimony through cross-examination. He testified that he was specifically aware of Dr. Uscinski and had previously heard Dr. Uscinski testify. Trial counsel claimed that he discussed retaining Dr. Uscinski with Campbell, but that Campbell declined to hire him because of the expense.

Campbell, his mother, and his cousin also testified at the evidentiary hearing. They testified that they asked Campbell's trial counsel about hiring an expert, and he informed them that it was not necessary. Campbell's mother, who paid for his defense, said she would have paid for an expert witness, but was not asked to do so.

The trial court made numerous findings of fact with respect to the issue of trial counsel's effectiveness, including that trial counsel understood the importance of hiring Dr. Uscinski or another expert, that trial counsel did not clearly convey the importance of hiring an expert to Campbell and his family, that Campbell's family was apparently willing to pay for an expert, that Campbell's family was not asked to pay for an expert even though trial counsel knew they were paying for the defense, that trial counsel never spoke with an expert, that trial counsel never hired an expert, and that trial counsel did not call an expert at trial. These findings of fact are supported by the record and are not challenged by the prosecution on appeal.

Given the court's findings, we affirm the trial court's decision to grant Campbell a new trial based on ineffective assistance of counsel. Under the circumstances, trial counsel's performance fell below an objective standard of reasonableness. He was aware of Dr. Uscinski, knew the value of his testimony, and knew that the principal contested issue in the case was whether the victim's injuries could have been caused by a fall down the stairs. Moreover, trial counsel was aware that the prosecution was offering nine medical experts to testify that the injuries could not have been caused by a fall down the stairs. Under these circumstances, Dr. Uscinski's testimony, or that of another similar expert, would have been crucial to refute the prosecutor's claims and support the defense that the victim was injured in an accidental fall.

The record also supports the trial court's determination that, but for trial counsel's defective performance, the outcome of trial would have been different. The trial court, which sat as the trier of fact, concluded that there was a high probability that its verdict would have been different had Campbell presented expert testimony to support his claim that the victim's injuries could have been caused by a fall down the stairs. The verdict was primarily based on the unchallenged medical testimony that a fall down the stairs could not account for the child's condition at the time she presented to the hospital. Dr. Uscinski's testimony would have directly refuted these conclusions. We conclude that the failure to call this witness constituted ineffective assistance of counsel, because it deprived Campbell of a substantial defense.<sup>11</sup>

----- Footnotes -----

<sup>11</sup> *Id.*

----- End Footnotes -----

The prosecution's argument on appeal rests on its assertion that Campbell decided not to hire an expert because of the cost. It argues that, where a defendant can afford to hire an expert and chooses not to do so, the failure cannot be attributed to defense counsel. But the trial court did not find that Campbell and his family chose to forego hiring an expert based on financial reasons. Rather, the court determined that defense counsel did not adequately import the need for an expert, that Campbell's family was apparently willing to pay for an expert, and that they were not asked to do so. The prosecution does not challenge these factual findings, but rather ignores them in making its argument.

In granting Campbell a new trial, the trial court also determined that trial counsel's failure with respect to the Iowa police reports fell below an objective standard of reasonableness. We agree. The reports would have been valuable in dispelling the notion that Campbell was

responsible for any abuse the victim may have suffered.

Accordingly, we conclude that the trial court did not abuse its discretion in granting Campbell a new trial.

#### IV. Campbell's Appeal

##### A. Moot And Abandoned Issues

In Docket No. 245263, Campbell raises several issues with respect to his trial. In light of our disposition in Docket No. 254807, we find it unnecessary to address most of the issues Campbell raises. First, Campbell's issues with respect to an evidentiary hearing and the great weight of the evidence are moot because Campbell was granted an evidentiary hearing and because we are affirming the order granting Campbell a new trial.<sup>12</sup>

----- Footnotes -----

<sup>12</sup> See *People v Briseno*, 211 Mich. App. 11, 17; 535 N.W.2d 559 (1995) (an issue is moot where a subsequent event renders it impossible for this Court to fashion a remedy).

----- End Footnotes -----

Second, we conclude that three of Campbell's issues should be deemed abandoned. Campbell argues that the presentation of "junk science" evidence at trial constituted error requiring reversal. But he fails to explain or rationalize his positions, or cite authority supporting that the alleged "junk science" evidence was improper or that the experts were erroneously permitted to testify in areas that exceeded their expertise. While Campbell cites *Daubert v Merrell Dow Pharmaceuticals, Inc.*,<sup>13</sup> and argues that the challenged testimony was unacceptable under "Daubert and its progeny," he completely fails to explain this position. His argument is cursory and conclusory, and we therefore decline to review it.<sup>14</sup>

----- Footnotes -----

<sup>13</sup> *Daubert v Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 593; 113 S. Ct. 2786; 125 L. Ed. 2d 469 (1993).

<sup>14</sup> See *People v Kelly*, 231 Mich. App. 627, 640-641; 588 N.W.2d 480 (1998) ("An appellant may not merely announce his position and leave it to this Court to discover and rationalize the basis for his claims, nor may he give only cursory treatment with little or no citation of supporting authority").

----- End Footnotes -----

We also deem abandoned Campbell's argument that he was denied his right to the presumption of innocence and a fair trial because the prosecution's experts improperly assumed his guilt and intent. This argument is conclusory, and Campbell fails to explain, rationalize, or support his positions with citation to relevant authority. We will not be left to discover and rationalize Campbell's claim that he was deprived of the important right to be presumed innocent unless proven guilty.<sup>15</sup>

----- Footnotes -----

<sup>15</sup> *Id.*

----- End Footnotes -----

We additionally find abandoned Campbell's argument that the evidence was insufficient to support his conviction of second-degree murder. He combines this argument with his cursory argument challenging the great weight of the evidence, fails to analyze the evidence in light of

the appropriate standard of review, and ignores circumstantial evidence favoring conviction.<sup>16</sup> We nevertheless note that we have considered the issue and find that the evidence, including the medical testimony presented, was sufficient to enable a rational trier of fact to find beyond a reasonable doubt that the victim's death was caused by Campbell's acts, with malice, and without justification or excuse.<sup>17</sup>

----- Footnotes -----

**16** *Id.*

**17** *People v Aldrich*, 246 Mich. App. 101, 123; 631 N.W.2d 67 (2001); *People v Legg*, 197 Mich. App. 131, 132; 494 N.W.2d 797 (1992).

----- End Footnotes-----

#### B. Suppression Of Campbell's Statements To Police

##### (1) Standard Of Review

Campbell argues that the trial court erred when it refused to suppress his statements to the police, which were made without the benefit of *Miranda*<sup>18</sup> warnings. We review this issue because the admissibility of Campbell's statements to the police is an issue that is likely to recur at retrial. We review the trial court's factual findings after a suppression hearing for clear error.<sup>19</sup> We review *de novo* the issue of whether Campbell was in custody.<sup>20</sup>

----- Footnotes -----

**18** *Miranda v Arizona*, 384 U.S. 436; 86 S. Ct. 1602; 16 L. Ed. 2d 694 (1966).

**19** *People v Herndon*, 246 Mich. App. 371, 395; 633 N.W.2d 376 (2001).

**20** *Id.*

----- End Footnotes-----

##### (2) The Trial Court's Ruling

The factual circumstances surrounding Campbell's statements to the police are complex. As Sergeant Patrick Beeman of the Coldwater Police Department explained it, in the late evening of January 5 and the early morning of January 6, 2001, he interviewed Campbell at the Coldwater police station. Part of this interview was recorded, through an audio-visual system with the video camera mounted on the windshield of Sergeant Beeman's patrol car. The video portion of the tape showed only the blank back wall of the police garage, toward which the video camera was apparently pointed during the interview. However, Sergeant Beeman had a mike on his duty belt that allowed him to pick up the audio portion of his conversation as long as he was nearby. Therefore, the audio portion of the tape, which commenced at approximately 10:56 PM of January 5 and continued through approximately 1:04 AM of January 6, was available and was played to the trial court.

However, the statements by Campbell that are at issue here are not contained in the audio portion of the tape. According to Sergeant Beeman, the recording device stopped because it simply ran out of tape. Approximately ten minutes after the tape ended, Sergeant Beeman, after taking an intervening call, recommenced the interview with Campbell. That interview continued, with several breaks and interruptions, until approximately 5:42 AM of January 6. Ultimately, Campbell signed a detailed statement. This later statement, while not necessarily inculpatory, did differ in several material respects from Campbell's earlier, recorded, statements. For example, in the later statement Campbell, after commenting that "this is where it differs significantly," indicated that as part of an unintended accident the child's head forcefully hit the back of the bathtub when he was bathing her. Similarly, after commenting

that "This is different," in the later statement Campbell indicated that, contrary to his earlier assertions, the child did not land on her face in the fall; rather, he stated, she "landed and hit the back of her head and slid down."

The trial court, after hearing argument from both sides, found both the recorded statements and the later statement to be admissible. The trial court stated:

Up until approximately 1:00 o'clock when, as we now all have heard, the second tape came to a conclusion - and commenting upon that only in light of Mr. Campbell's testimony - the Court would determine that he had voluntarily gone to the police station under the circumstances, even in light of Mr. Campbell's testimony, the court would conclude was voluntary and the statements would be admissible.

As indicated, the real focus was upon that portion of the interview that purportedly took place after the second tape ended. Towards that point, as [the prosecution] has indicated, it may have been helpful if the tape itself had continued or a new one had been inserted. It may have been helpful if there had actually been a recording - a video recording device in the interview room so that we could have seen the demeanor of the participants. That's not required. I suppose I could hope that the legislature of this state, as some legislatures in other states are doing, might make that mandatory. But to this point it is not.

The officer testified that he didn't know when the tape ended, though he certainly presumed that it would end at some point.

And the Court would also indicate that it appeared that the attitudes of the intervening officer effectively [presumably Sergeant Beeman] had changed and become more accusatory even before the second tape ended.

Other points for the Court to consider. The duration of the interview, approximately eight hours was long, but the Court would determine not excessive under these circumstances. The only discussion of an attorney apparently arose in response to discussions about the defendant's agreeing to take a polygraph, but according to Officer Beeman, in order to avoid any misunderstanding, he asked the defendant if he wished to speak to an attorney. And the defendant declined.

The defendant was provided water and relieve, was allowed to smoke both accompanied and apparently, at least on one or two occasions, unaccompanied when the garage door was dropped and the manpower was not sufficient to have someone accompany him to the garage. And then later an ashtray of some sort was provided in the interview room, apparently to the stress of Officer Beeman.

In the portion of the tape that the Court has heard -and the Court would conclude that defendant never specifically asked to leave. He did state that he wanted to go to the hospital and was told that the interview would continue so that some more questions could be asked. But it would be done as quickly as possible. He was never told that he could not leave.

As a matter of fact, both Officer Beeman and Deputy Director Bartell suggested that had the defendant wanted to leave he could have; that they were at that point in no position to stop or detain him.

The defendant, from his brief testimony, has revealed himself to be an intelligent, articulate and educated individual, who, more than many, understood his rights and his circumstances. While the offering of the Miranda rights may have been helpful, the Court would determine that under the totality of all these circumstances, and applying the objective standard in such cases, they were not required.

The Court is, however, persuaded that even if the right had been given that under these circumstances, more likely than not, the defendant would have continued to talk. As Officer Beeman suggested, he was willing to do so in an attempt to offer further explanations after he was placed under arrest later in the morning.

Because of all of this the Court would determine that any subsequent statements are admissible.

### (3) Legal Standards

This Court has held that

*Miranda* warnings are necessary only when the accused is interrogated while in custody, not simply when he is the focus of the investigation. Custodial interrogation is "questioning

initiated by law enforcement officers after a person has been taken into custody or otherwise deprived of his freedom of action in any significant way."<sup>21</sup>

In other words, "an officer's obligation to give *Miranda* warnings to a person attaches only when the person is in custody, meaning that the person has been formally arrested or subjected to a restraint on freedom of movement of the degree associated with formal arrest."<sup>22</sup> In *Peerenboom*, this Court refused to suppress statements given without *Miranda* warnings because the defendant was not formally arrested and no formal restraint was placed on her freedom of movement at the time the statements were given.<sup>23</sup> When determining whether a defendant was in custody at the time his statements were made, the totality of the circumstances must be reviewed.<sup>24</sup> The key question is whether the accused could reasonably have believed that he was not free to leave.<sup>25</sup> Objective circumstances are reviewed rather than the subjective views harbored by the interrogating officers or the person being interviewed.<sup>26</sup>

----- Footnotes -----

<sup>21</sup> *Id.* at 395-396 (citation omitted).

<sup>22</sup> *People v Peerenboom*, 224 Mich. App. 195, 197-198; 568 N.W.2d 153 (1997), citing *Stansbury v California*, 511 U.S. 318, 322; 114 S. Ct. 1526; 128 L. Ed. 2d 293 (1994).

<sup>23</sup> *Peerenboom*, *supra* at 198. See also *People v Kulpinski*, 243 Mich. App. 8, 25; 620 N.W.2d 537 (2000).

<sup>24</sup> *People v Coomer*, 245 Mich. App. 206, 219-220; 627 N.W.2d 612 (2001).

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

----- End Footnotes-----

#### (4) Applying The Standards

We first note that, on the critical question of whether Campbell was free to leave the Coldwater police station, the testimony was contradictory. Sergeant Beeman testified that at no point did Campbell ask that the interview end and that at no point did Campbell ask to leave. Specifically, Sergeant Beeman said that "Had [Campbell] wanted to get up and walk out the door he would have gone." Campbell, by contrast, said that he was never told he could leave, that he believed he had to stay, and that one point he specifically asked to leave the station and received a "non-committal" answer.

The trial court rather clearly believed the testimony of the police officers when it concluded that the defendant never specifically asked to leave and was never told that he could not leave. It is black letter law that questions of witness credibility are for the trier of fact, and that appellate courts are not to engage in retroactive review of such credibility determinations.<sup>27</sup> However, in determining whether a defendant is in custody, the test is objective one and the subjective views of the interrogating officers or the person being interviewed are irrelevant. To the extent that the trial court engaged in a subjective determination in finding the police officers' testimony more credible than Campbell's testimony,, it erred.

----- Footnotes -----

<sup>27</sup> See *People v Fletcher*, 260 Mich. App. 531, 561; 679 N.W.2d 127 (2004).

----- End Footnotes-----

Further, the trial court's somewhat offhand comment that it was more likely than not that, had the *Miranda* warnings been given, Campbell "would have continued to talk" was most certainly both speculative and subjective. We conclude, however, that these errors were harmless when the totality of the circumstances are considered, and we note that the trial court accurately and succinctly stated that it was required to consider the totality of the circumstances and to apply an objective standard. It is undisputed that Campbell voluntarily went to the police station, that he was informed on two occasions that he was not under arrest, and that he never asked to leave while his conversations were being recorded. These facts support the trial court's finding that Campbell was not in custody during the recorded portion of the interview.

The facts relating to the unrecorded portion of the interview and to Campbell's later statement are murkier. Clearly, Campbell thought he was not able to leave the police station while the police officers thought he was free to go at any time, but these are subjective views and help us not at all when it comes to the ultimate question of whether an objective person in Campbell's circumstances would reasonably have believed that he was not free to leave. We concede that the atmosphere of a police station can be an intimidating one. We are cognizant of the fact that, whether the doors to the interview room were open or closed, a reasonable person might experience both apprehension and a certain amount of claustrophobia under such circumstances. We appreciate the fact that an eight-hour interview, even with the undisputed interruptions and smoking breaks, almost certainly produced a certain level of fatigue. We also recognize that the fact that Campbell was indeed arrested at the conclusion of the interview lends credence to his argument that he may not have been allowed to leave had he attempted to do so.<sup>28</sup>

----- Footnotes -----

<sup>28</sup> See *Oregon v Mathiason*, 429 U.S. 492, 495; 50 L. Ed. 2d 714, 97 S. Ct. 711 (1977) (fact that person was not arrested at conclusion of interview weighed against finding that he was in custody).

----- End Footnotes -----

However, we agree with the trial court that the duration of the interview, while long, was not excessive. Further, the fact that Campbell was allowed to move around the police station unaccompanied on at least one occasion leads us to conclude that his freedom of movement was not restrained to the degree associated with formal arrest up to and including the time he gave his later statement.<sup>29</sup> Finally, we note that the statement itself was very--indeed, it could be said that it is excruciatingly--detailed. While this fact could be indicative of Campbell's desire to give the officers enough information that they would conclude the interview and allow him to leave, it could also indicate Campbell's desire to present the officers with a sufficiently complete and credible account of the incident to exculpate himself. The content of the statement supports the latter view: although it amplified on and to some extent contradicted Campbell's earlier recorded statements, it contained no confession. There are no indicia in that statement that, when considered objectively, would lead to the conclusion that a reasonable person providing such an exhaustive account of the circumstances leading up to the death of the child did so while under formal restraint on his freedom of movement.

----- Footnotes -----

<sup>29</sup> See *Peerenboom, supra* at 197-198, citing *Stansbury, supra* at 322.

----- End Footnotes -----

Accordingly, in Docket No. 254807, we affirm the trial court's grant of a new trial for Campbell. In Docket No. 245263, we affirm the trial court's denial of Campbell's motion to suppress his statements to the police. The case is remanded for further proceedings consistent with this opinion. We do not retain jurisdiction.

/s/ William C. Whitbeck

/s/ Donald S. Owens

**CONCUR BY:** Bill Schuette

**CONCUR**

SCHUETTE, J. (*concurring*):

I join in the opinion authored by my distinguished colleague, Chief Judge Whitbeck.

I write to comment upon the arguments made by and the evidence introduced by the prosecuting attorney in Branch County which seemingly point to defendant as the perpetrator of the brutal murder of Paige Anderson, a ten-month-old infant. However, two instances of glaring, ineffective assistance of counsel constrain us in reversing the trial court's order granting Campbell a new trial. Instead, we are required to affirm the trial court's order granting a new trial which I hope is convened in order to provide a measure of justice to the infant Paige Anderson.

Our standard of review of a trial court's decision to grant a new trial is abuse of discretion. Here, the trial court, when faced with two severe, gaping instances of ineffective assistance of counsel, properly granted a new trial. This decision was in the proper exercise of the trial court's discretion. As mentioned in the majority opinion, the failure of defendant's trial counsel to produce police records from Iowa concerning an allegation of physical abuse of another of Terri Anderson's children, with whom defendant purportedly had no contact, falls short of the standard of performance for a defense attorney. Conceivably, the introduction of these records could have injected a scintilla of doubt concerning the involvement of Campbell and his guilt in the death of Terri Anderson's child, Paige, in Michigan. Defendant must overcome the presumption that the challenged action might be considered sound trial strategy. *People v Tommolino*, 187 Mich. App. 14, 17; 466 N.W.2d 315 (1991). Here, there is no indication that the failure to present this testimony constituted sound trial strategy. Credible police records indicating that Anderson may have had a history of physical abuse involving one of her other children would only have helped defendant's case.

The prosecution worked diligently with nine different experts to introduce scientific and opinion evidence as to the circumstances how this ten-month infant met her death at the hands of Campbell. Defendant chose not to refute the prosecution's experts, challenge their credentials or otherwise counter the prosecution's massive display of expert firepower. The evidentiary hearing revealed the outright absence of meaningful representation to challenge the prosecution's experts. Moreover, the evidentiary hearing revealed that defendant and his family were willing to pay for expert witness testimony, but defense counsel declined even to discuss with defense expert witnesses about testifying in this case. Furthermore, the evidentiary hearing identified expert witnesses who would have offered, if called upon to testify, a contrary opinion about the cause of death of Paige Anderson. This potential expert testimony would have substantiated defendant's story of the child slipping out of the defendant's hand and accidentally tumbling down a flight of stairs. Finally, as a legal and judicial coup de grace, the trial judge, the finder of fact closest to this case stated that had defendant introduced contrary expert evidence at trial, "there is a strong likelihood I would have found the defendant not guilty." These conspicuous instances of ineffective counsel, coupled with the trial judge's unequivocal comments preclude this panel of judges from ruling any way except in accord with the trial court's order for a new trial.

I encourage the plaintiff-appellant to convene a new trial. I presume that effective assistance of counsel will be provided to defendant. I hope that justice is provided to Paige Anderson.  
/s/ Bill Schuette

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2005 WL 1842457 (C.A.4) (Appellate Brief)

United States Court of Appeals,  
Fourth Circuit.

Troy TESTERMAN, Plaintiff-Appellant,

v.

RIDDELL, INCORPORATED, Defendant-Appellee.

No. 05-1505.

June 27, 2005.

On Appeal from the United States District Court for the Western District of Virginia at Danville

**Brief of Appellant**

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## STATEMENT OF JURISDICTION

## 1. Basis for Subject Matter Jurisdiction in the District Court:

The District Court had subject matter jurisdiction over this diversity suit under 28 U.S.C. § 21332.

## 2. Basis for Jurisdiction in the Court of Appeals:

This Court has jurisdiction under 28 U.S.C. § 21291.

## 3. The Notice of Appeal Was Timely Filed:

The District Court entered an order granting Riddell's Motion in Limine and Motion for Summary Judgment on February 10, 2005. On April 7, 2005, the District Court entered an order denying Testerman's Motions for Reconsideration pursuant to Rule 59(e), Notice of appeal was filed on May 4, 2005.

## 4. The appeal is from a final order disposing of all of the claims:

The District Court granted summary judgment in favor of Riddell and denied Testerman's Motion to Reconsider. Appeal is therefore from a final order disposing of all of Testerman's claims.

Troy TESTERMAN, Plaintiff-Appellant, v. RIDDELL,..., 2005 WL 1842457...

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#### STATEMENT OF THE ISSUES

1. Should an expert be excluded, based at least in part on a review by the court of an enhanced videotape of the incident produced by defendant, but not available to the expert prior to the *Daubert* hearing and the court's decision on summary judgment?
2. When reviewing a Motion to Reconsider, may a court properly ignore an affidavit from an expert based on his analysis of evidence which was unavailable to him prior to the court's initial decision?
3. Is an expert who is otherwise found qualified by the court, properly excluded for alleged uncertainty as to his ultimate conclusions or does the validity of the ultimate conclusions of an expert go to the weight to be accorded the opinion by a jury?
4. May a court properly exclude an expert opinion merely because the court agrees with the opinion of an expert for the opposing side?
5. Is entry of summary judgment for the defense proper based on the exclusion of expert testimony where negligence can be proved without expert testimony?

#### STATEMENT OF THE CASE

Appellant Troy Testerman ("Testerman") appeals the April 7, 2005 final order denying his Motion to Reconsider as well as the district court's previous decisions granting Appellee Riddell, Inc.'s ("Riddell") Motion in Limine and Motion for Summary Judgment.

By amended complaint, Testerman claimed that Riddell and its agents improperly fitted him for shoulder pads, resulting in his sustaining a severe and career-ending football injury. (Joint Appendix, page 20, "JA-9"). Testerman designated an expert, Kent Falb, who became the subject of a Motion in Limine to exclude his testimony. (JA-230). Riddell also moved for summary judgment in reliance on its motion to exclude Falb's testimony. (JA-58).

After receiving briefs from both parties, (JA-232; 318) and conducting a hearing, (JA-519) the district court ruled that Falb's testimony should be excluded and that summary judgment should enter in favor of Riddell. (JA-568). Although the district court found that Falb was qualified to testify as an expert witness, the court found that Falb's testimony was unreliable based on his "inability to speak with certainty regarding the specific cause of [Testerman's] injury." (JA-571).

Testerman moved for reconsideration pursuant to Rule 59(e). (JA-588). The district court denied the Motion to Reconsider by opinion and order entered April 7, 2005. (JA-723; 729). A notice of appeal was filed on May 4, 2005. (JA-730).

#### STATEMENT OF THE FACTS

On August 31, 2002, Appellant Troy Testerman shattered his scapula while wearing brand-new Riddell pads in the first contact scrimmage of his senior season at Averett University. (JA-11-12) The injury was rare and severe, requiring a difficult operation and months of rehabilitation. (JA-456)

In contrast, as demonstrated by the film of the play, the hit which shattered his scapula was neither rare nor unusual. (JA-Videotape) Testerman lined up in the backfield, caught a pass coming out of the backfield and went down after being hit by several players. (JA-Videotape).

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On August 15, 2002, approximately two weeks prior to the scrimmage, Testerman had been fitted for his new shoulder pads by Chris Williams, an employee of All-American Sports Corporation, a Riddell affiliate, from whom Averett had ordered the pads. (JA-10-11). Williams fitted Testerman's pads and Testerman's shoulder was destroyed on the first contact scrimmage after receiving the pads. (JA-11-12).

By amended complaint, (JA-23) Testerman sued Riddell under theories of products liability<sup>1</sup> and negligence, alleging that the pads were defective and that they were negligently fitted for him by Riddell.

A videotape of the play on which Testerman was injured was produced by Averett University. (JA-Video). Unbeknownst to Testerman, Riddell created an enhanced copy of this original video, which included slow motion and enlargements. (JA-Video). This video was reviewed by the court prior to the *Daubert* hearing on whether to permit the testimony of Testerman's expert, Kent Falb, and was seen for the first time by Testerman's counsel *during* the hearing and was not available to be reviewed by Testerman's expert until after the hearing. (JA-520-521; 547).

#### **Expert Designation of Kent Falb based on the unenhanced video**

In support of his negligence claim, Testerman designated as an expert witness, Kent Falb, a long-time trainer for the Detroit Lions of the National Football League. (JA-36). Both Falb's initial expert report and his deposition testimony were based only on his review of the initial unenhanced video which Falb did his best to review. (JA-267-268).

In his expert report, (JA-36), dated November 18, 2004, based on that initial video, Falb stated:  
Based upon my review of all of the information in this case, it is my opinion that the pads in question were negligently fitted for Troy Testerman.

The particular Power 34 pads in question are too small for Troy Testerman. They are clearly too short and failed to cover or protect his shoulders in a reasonable manner. The pads were fitted by Chris Williams on behalf of Riddell and Mr. Williams negligently failed to pick a pair large enough to maximize protection for Troy Testerman's shoulders. The size L pads did not adequately cover Troy's deltoids and were not a reasonable choice of pads for him to wear. He needed a larger size and needed pads that would afford him more protection as a ball carrier. Other pads and a larger size pair of pads would have protected his shoulder and prevented this injury.

My opinion with regard to the precise cause of his injury is that the helmet hit his unprotected posterior shoulder at an angle such that it fractured his scapula and detached the glenoid. This is an injury that would not have resulted from the ordinary blow from a helmet to the back of a shoulder that was protected by shoulder pads. In my opinion the improper fitting of the pads was a proximate cause of the shoulder injury of Troy Testerman.

I reserve the right to supplement my opinions consistent with additional treatment and discovery in this case and in rebuttal to any opinions which might be propounded on behalf of the defendant. All of my opinions are offered to a reasonable degree of medical certainty.

(JA-39-40).

Prior to his January 5, 2005, deposition, Falb reviewed the same video clip using better equipment and determined that the hit did not come from the posterior blow as he stated in his Rule 26 report, but instead came from the anterior-lateral blow to Testerman's left side. (JA-274).

During his deposition, Falb made a number of statements characterized by Riddell as inconsistent regarding both the mechanism of injury and whether the blow was to an area unprotected by pads. (JA-238-240). In his sworn errata sheet, filed with his

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deposition (JA-344), Falb explained that the alleged inconsistencies were a product of confusion, "The above clarifications were made necessary because I found the questions during the deposition sometimes confusing. When reading my deposition I was better able to understand the questions and thus offered the clarifications on these Errata pages." (JA-347).

Falb was a relatively inexperienced witness, his involvement as a witness limited mostly to workers' compensation cases and NFL grievance hearings relating to player injuries during his stint with the Lions. (JA-41). This was the first case in which he was ever engaged to evaluate equipment fitting or safety.

**Falb's opinion after review of the enhanced video**

As stated above, prior to the filing of his initial opinion and his subsequent deposition, Falb had viewed only the videotape filmed in real time prepared by Averett University. At the district court's hearing held on January 31, 2005, it was revealed for the first time that Riddell had created a separate, enhanced, videotape which had not been previously disclosed and which Testerman's counsel viewed for the first time at the hearing. (JA-520-521; 547; see also JA-20, Riddell's Initial Disclosure). Because the videotape was not disclosed prior to the hearing, Falb did not view this second enhanced tape until after his deposition and after the hearing on the Motion in Limine to exclude his testimony. This second tape contained both slow motion and blow ups of the play. (JA-Video).

After viewing this enhanced videotape and as further clarification of his opinions, Falb filed an affidavit on February 15, 2005, indicating that he had now viewed not only the original videotape of Testerman's injury, but the second video, enhanced by Riddell. The affidavit goes on to state,

2. I have reviewed two videotapes of the injury to Troy Testerman which occurred on August 31, 2002. These two videotapes consist of a tape in real time prepared by Averett University staff and a tape with slow motion and enlargements, prepared by the defense in this case, attached hereto as Exhibit A.
3. I have formed an opinion about the cause of the injury to Troy Testerman and hold my opinions to a reasonable degree of certainty.
4. In my opinion Mr. Testerman's shoulder fractures were caused by the anteriolateral blow to his shoulder by an opposing player.
5. In my opinion, the area of his shoulder impacted by this anteriolateral blow was left exposed at the time of the impact because the shoulder pads were too small, which caused them to ride up.

(JA-586-587).

**Other witnesses designated as experts<sup>2</sup>**

In addition to Kent Falb, four other experts were designated in this case. Testerman designated Carl J. Basamania, M.D., who was Testerman's treating physician. (JA-455). Dr. Basamania did not review either video in this case and did not opine about the mechanism of injury. However, relevant for the purposes of this appeal is that Dr. Basamania acknowledged the possibility of a role for an elbow impact to the ground in such an injury, but stated that the elbow would have to be at a ninety-degree angle from the body at point of impact for it to have shattered the shoulder in the manner that Testerman suffered. (JA-667-668).

Testerman also designated as a rebuttal expert, Joe Gieck, Director of Sports Medicine at the University of Virginia. Mr. Gieck's opinion is

**Troy TESTERMAN, Plaintiff-Appellant, v. RIDDELL,..., 2005 WL 1842457...**

that the pads in question were definitely too small for Troy Testerman and that a properly fitted pad would have provided more protection, been able to better absorb a blow to this area of the shoulder, and therefore, to a reasonable degree of certainty, this injury would not have occurred or could have been less severe.

It is unreasonable to claim that another size of pad would not have prevented this injury. Properly fitting pads can and do prevent this sort of injury. While no pad can protect a player from all injury in all cases, I have reviewed the blows delivered in this case, and I can say to a reasonable degree of certainty that a properly fitted pad could have prevented, or reduced the severity of, this injury.

(JA-463-464).

Riddell designated two experts who claimed that the shoulder pads were neither improperly fitted nor the cause of the injury. P. David Halstead, Technical Director of the Southern Impact Research Center, opines that the trauma that led to Testerman's injury was a result of his upper left arm being driven into the ground with an opposing player on top of him. (JA-163) Mr. Halstead further opines that the shoulder pads worn by Mr. Testerman were not incorrectly fitted and that Mr. Testerman's injury was not preventable by any shoulder pad. (JA-162-163).

In contrast to Halstead, the other expert designated by Riddell,<sup>3</sup> Dr. Chris Van Ee, a biomechanical engineer, agreed with Mr. Falb that the "direct trauma to the anterior coracoid-glenoid neck region" was the blow most likely to have caused the injury. (JA-175). Van Ee's opinion specifically excluded Halstead's scenario as the likely cause of the blow,

It is not clear from the video, if indeed there is any significant loading through his upper arm and into his shoulder during this loading scenario [the impact with the ground]. If the loads were indeed great during this scenario the loading pattern would more likely result in a starburst or chip fracture of the glenoid fossa rather than the vertically oriented fracture that Mr. Testerman sustained.

(JA-172).

#### SUMMARY OF ARGUMENT

The district court erred when it granted Riddell's Motion in Limine excluding the testimony of Testerman's expert, Kent Falb. First, Falb was disadvantaged in having access to only the ordinary, unenhanced video before drafting his opinion and before being deposed. His affidavit of February 15, 2005, based upon his review of the enhanced videotape expressed the certainty that the district court found he lacked earlier. The district court refused to consider this new affidavit, despite the fact that it was a product of information previously unavailable to the witness. Because this affidavit clarified Falb's opinion and left no doubt about the certainty of his opinions, the district court committed clear error in ignoring it and refusing Testerman's motion to reconsider.

Second, the district court incorrectly focused on what it called uncertainty in Falb's ultimate conclusions. Thus, although the district court found that Falb was qualified to give an expert opinion, and although it found no problems with Falb's methodology, the district court excluded his testimony. Despite apparent confusion and inexperience about the standard required for expert opinions, Falb possessed opinions of sufficient certainty to go to the jury and any alleged indecision should have been left to the jury to resolve. By focusing on Falb's conclusions and not the principles and methodology underlying the conclusions, the district court violated the clear teaching of *Daubert*.

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In excluding Mr. Falb, the district court also relied on the opinions of Riddell's expert, Mr. Halstead, which were contradicted both by Falb and Riddell's own expert, Dr. Chris Van Ee. The district court erred in adopting the opinion of one witness over every other designated witness in the case and should have allowed the jury to resolve the dispute among the experts.

The district court likewise erred in granting summary judgment for Riddell based on its exclusion of the testimony of Mr. Falb. Testerman was entitled to prove this negligence case without the need for expert testimony and the exclusion of Mr. Falb should not have prevented the case from going forward.

As the district court erred in granting summary judgment, the case should be reversed and remanded for trial.

## **ARGUMENT**

### **STATEMENT OF THE STANDARD FOR REVIEW**

Review of the denial of a motion to reconsider under Fed. R. Civ. P. 59(e) is for abuse of discretion. *Temkin v. Frederick County Comm'r's*, 945 F.2d 716, 724 (4th Cir. 1991), cert. denied, 502 U.S. 1095 (1992).

Courts of appeals are to apply an "abuse of discretion" standard when reviewing a district court's reliability determination regarding an expert witness. *General Electric Co. v. Joiner*, 522 U.S. 136, 143 (1997).

The standard of review on a grant of summary judgment is *de novo*, viewing the evidence in a light most favorable to Testerman and giving him the benefit of all reasonable inferences. *Gasner v. Board of Sup'r's of County of Dinwiddie, Va.*, 103 F.3d 351, 356 (4th Cir. 1996); *Odom v. South Carolina Dept. of Corrections*, 349 F.3d 765, 774 (4th Cir. 2003).

## **DISCUSSION OF THE ISSUES**

### **I. THE DISTRICT COURT COMMITTED CLEAR ERROR IN REFUSING TO CONSIDER FALB'S AFFIDAVIT BASED ON NEW EVIDENCE.**

In its decision granting Riddell's motion in limine to exclude Mr. Falb and granting summary judgment, the district court found that "Falb's 30 years of experience as a trainer with a professional football team makes his opinion that [Testerman's] pads were too small sufficiently reliable." (JA-571) However, the court then noted Falb "relied on a 'strictly visual' real-time videotaped footage of the play on which [Testerman] was injured." (JA-571). The court found that this did not render his opinion unreliable, but nonetheless excluded Falb's opinion because he was: 1) unable to state with certainty which blow actually caused the injury; and 2) unable to state with certainty that the injuring blow was to an area unprotected by pads. (JA-571; 573).

After the *Daubert* hearing concerning Mr. Falb, Falb had the opportunity for the first time to review the enhanced videotape which Riddell had previously not disclosed<sup>4</sup> and which the court reviewed prior to the hearing. Upon reviewing this version of the videotape, Falb filed an affidavit which made clear his opinions. Falb thus had the opportunity to view the same videotape apparently relied upon by Riddell's experts and the same tape which Gieck relied on for his opinion. (JA-463).

The affidavit made clear that Falb held definite opinions on the two deficiencies noted by the district court,  
2. I have reviewed two videotapes of the injury to Troy Testerman which occurred on August 31, 2002. These two videotapes consist of a tape in real time prepared by Averett University staff and a tape with slow motion and enlargements, prepared by the defense in this case, attached hereto as Exhibit A.

3. I have formed an opinion about the cause of the injury to Troy Testerman and hold my opinions to a reasonable degree of certainty.

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4. In my opinion Mr. Testerman's shoulder fractures were caused by the anteriolateral blow to his shoulder by an opposing player.

5. In my opinion, the area of his shoulder impacted by this anteriolateral blow was left exposed at the time of the impact because the shoulder pads were too small, which caused them to ride up.

(JA-586-587).

Thus, Falb's review of the same videotape that Riddell's experts had access to *prior to* the *Daubert* hearing allowed him to state with certainty opinions about the two areas the court noted had been deficient: which blow caused the injury, and that the blow was to an area unprotected by pads. Thus, as a purely factual matter, Mr. Falb now held opinions that should have satisfied the district court.

Testerman attached this affidavit to his Motion to Reconsider pursuant to Rule 59(e). He also presented additional evidence from Falb's deposition seeking to establish Falb's reliability and the certainty with which he held his opinions. (JA-648-657; 669-672).

The district court refused to consider this affidavit on the ground that it did not qualify as "new evidence" for the purposes of Rule 59(e). It held that Testerman was "obliged to show not only that this evidence was newly discovered or unknown to it until after the hearing, but also that it could not with reasonable diligence have discovered and produced such evidence at the hearing." (JA-725-726; citations omitted).

This Court has held that although Rule 59(e) provides no standards for when a court may grant a motion to reconsider, there are three grounds for doing so:

- (1) to accommodate an intervening change in controlling law;
- (2) to account for new evidence not available at trial; or
- (3) to correct a clear error of law or prevent manifest injustice.

*Hutchinson v. Staton*, 994 F.2d 1076, 1081 (4th Cir. 1993). Testerman's motion for reconsideration was an effort to account for this new affidavit, not previously available.

This Court has interpreted the term "new evidence" to include evidence submitted if the party proffering the evidence can "produce a 'legitimate justification for not presenting' the evidence during the earlier proceeding." *Small v. Hunt*, 98 F.3d 789, 798 (4th Cir. 1996) (quoting *RGI, Inc. v. Unified Indus., Inc.*, 963 F.2d 658, 662 (4th Cir. 1992)). In *Small*, this Court upheld the district court's reconsideration under Rule 59(e) because the issue prompting reconsideration had not previously been brought to the attention of the parties as an issue for the court, "The state had a 'legitimate justification for not presenting' the reconfiguration plan earlier because until the court expressed its concern about a center row of bunks, the state had no reason to present an alternative proposal for the court's consideration." *Small*, at 798.

The same can be said for Falb's affidavit. He did not have access to the key video before the district court's hearing. As such, there is a legitimate justification for not coming forward with the affidavit before. See, *Clark v. Virginia Bd. of Bar Examiners*, 861 F. Supp. 512, 518-519 (E.D. Va. 1994) (Granting plaintiff's motion to alter court's initial decision granting summary judgment to defendant on the ground that plaintiff's submission under seal of a more detailed declaration with her motion to amend persuaded the Court that her case should have survived summary judgment.)

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Testerman could not with reasonable diligence have produced such evidence at the district court's hearing on January 31, 2005, because the tape as modified by Riddell was not made available to Testerman until after the hearing. (JA-567). Counsel for Testerman's first view of the enhanced video did not come until the hearing, and Mr. Falb, who was not present at the hearing, was not sent a copy until after the hearing. Mr. Falb's affidavit indicates that it is based upon his review of this enhanced video as well as the original video produced by Averett University. (JA-586). Thus, his affidavit could not have been produced with diligence prior to the hearing and the district court was in error in excluding review of Testerman's evidence in support of the Motion to Reconsider.

Because Mr. Falb's affidavit was based on an enhanced video only available to him *after* the hearing in this matter, the affidavit is therefore new evidence and should have been accepted by the district court for Rule 59(e) purposes.

The district court committed a clear error of law by refusing to recognize the affidavit as new evidence. Because the affidavit does state with certainty the opinions held by Mr. Falb, and because the opinions on causation directly answer the deficiencies noted by the court, the district court abused its discretion in not reconsidering its decision based on the Falb affidavit.

## II. THE DISTRICT COURT ABUSED ITS DISCRETION WHEN IT EXCLUDED THE TESTIMONY OF TESTERMAN'S EXPERT, KENT FALB, ON THE BASIS THAT FALB'S CONCLUSIONS WERE UNCERTAIN.

### *A. By rejecting Falb's conclusions, the court violated the clear teaching of Daubert.*

The district court ruled pursuant to its Memorandum Opinion of February 10, 2005 that Mr. Falb, by way of his 30 years of experience as a trainer with the Detroit Lions, is qualified as an expert witness in this case to state that the pads fitted for Mr. Testerman were too small. (JA-571). In its opinion, the court likewise noted no problems with Falb's methodology, despite the fact that Riddell had challenged Falb's methodology and qualifications on a number of grounds.

The court however ruled that Mr. Falb's conclusion regarding the role of the pads in producing Mr. Testerman's injury was unreliable because Falb lacked certainty in this opinion. (JA-571). In so ruling, the court concluded that Mr. Falb was unable to state with certainty: 1) which of the several blows caused the injury and 2) that the injuring blow was to an area unprotected by the pads Mr. Testerman was wearing. (JA-571; 573). Neither of these areas of purported uncertainty went either to Falb's qualifications or methodology; they went to his conclusions.

The court erred in so holding. By grounding its decision on Falb's conclusions, the district court committed clear error. In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 594-595 (1993), the Supreme Court made clear that the gatekeeper role of the district court was not one of questioning the conclusions of an expert, but only reviewing the methodology used to reach those conclusions,

The inquiry envisioned by Rule 702 is, we emphasize, a flexible one. Its overarching subject is the scientific validity -- and thus the evidentiary relevance and reliability -- of the principles that underlie a proposed submission. *The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.*

*Id.*, (emphasis added). See also, *Campbell v. Metropolitan Prop. & Cas. Ins. Co.*, 239 F.3d 179 (2d Cir. 2001)(Any gaps or inconsistencies in expert's reasoning go to weight, not admissibility.)

Because the district court committed an error of law in excluding Falb's testimony, it necessarily abused its discretion and Testerman is entitled to have a jury hear his case. See *United States v. Barile*, 286 F.3d 749, 753 (4th Cir. 2002) ("[A] district court by definition abuses its discretion when it makes an error of law.") (citation omitted).

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*B. The district court erred in ignoring the instances demonstrating that Mr. Falb does hold his opinions with sufficient certainty.*

Moreover, the court erred by ignoring the fact that Mr. Falb does, in fact, have an opinion as to the proximate cause of Troy Testerman's shoulder fractures in this case and can so state with certainty. This has been evidenced throughout the litigation, including in his deposition, in the statements made on his sworn errata sheet attached to his deposition, and in a summary of his opinions in his affidavit executed on February 15, 2005.

The court's quibble with Mr. Falb's conclusions is based at least in part on assumptions about Mr. Falb's experience as an expert witness. Merely because Mr. Falb possesses sufficient qualifications to testify as an expert in this case does not mean that he is an experienced expert witness. Outside of the unique world of workers' comp. cases, Falb has never testified as an expert. (JA-41). An examination of the transcript of his deposition, together with his sworn errata sheet reveals a certain naivete about the requirements, including the "magic words" required for expert testimony to be accepted in court.

In his sworn errata sheet to his deposition, Mr. Falb makes clear that the alleged inconsistencies were a product of this confusion. "The above clarifications were made necessary because I found the questions during the deposition sometimes confusing. When reading my deposition I was better able to understand the questions and thus offered the clarifications on these Errata pages." (JA-347). His failure to utilize the magic words, and indeed his honest grappling with the concept of "reasonable certainty" versus "absolute certainty" or other standards enunciated by defense counsel during the deposition (JA-322-324), do not make his opinion unreliable and in fact reflect refreshing honesty.

Because Mr. Falb holds his opinions to a reasonable degree of certainty about both the blow that caused the injury and the location of the blow in relation to Mr. Testerman's padding, the district court abused its discretion in excluding his testimony. Any noted inconsistencies or failure to speak with certainty were matters that should have been left to the jury. See, *Mosser v. Fruehauf Corp.*, 940 F.2d 77, 83 (4th Cir. 1991) (Approving district court's holding that it is for a jury to weight the evidence and credibility of each expert).

**1. Mr. Falb's Opinion on the Blow that Proximately Caused the Injury**

The district court correctly noted that Mr. Falb's opinion on the blow that proximately caused the injury changed from the time of his report to the time of his deposition. (JA-571). In his expert report, Mr. Falb noted that the blow that caused the injury was a posterior blow. (JA-40). At his deposition, he changed his opinion and stated that it was the anterior-lateral blow that caused the injury. (JA-274). In his deposition, Mr. Falb candidly explained why his opinion changed regarding the blow that was a proximate cause of Mr. Testerman's injury,

To go back and answer your question, I was provided the film, looked at it, rendered my opinion. And then in preparation for this deposition I went back over everything because it had been in the fall. I wanted to have it fresh in my mind. At that point is when, as you said, I changed my opinion that it was probably more of an anterior-lateral mechanism than posteriorly.

I had looked at it. And when I reviewed it this time, I had a more sophisticated VCR/DVD player to look at it.

(JA-274).

Far from exhibiting uncertainty, this change in opinion reflects a witness who was honestly trying to be careful in forming his opinion and through his conscientious efforts honestly revised his initial opinion. This is hardly cause for excluding his testimony and any alleged inconsistencies can be explored on cross-examination. See, *Maryland Cas. Co. v. Thermo-O-Disc, Inc.*, 137 F.3d 780, 783 (4th Cir. 1998) ("Thus, in addition to prescribing fluid and general standards for the admission of

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scientific testimony, *Daubert* also described the trial court's role as that of a "gatekeeper" who should exercise broad discretion in admitting scientific testimony that could later be tested by "[v]igorous crossexamination, presentation of contrary evidence, and careful instruction on the burden of proof..."); *Tunnel v. Ford Motor Co.*, 330 F. Supp.2d 731, 740 (W.D. Va. 2004) ("To the extent that [the expert's] opinions ought not be credited because he may have changed them over time, that is properly the subject of cross-examination and argument to be decided by the trier of fact.")

The district court, however, took this simple change of opinions one step further and held that Mr. Falb was uncertain in his opinion. This was an abuse of discretion. Mr. Falb is certain in his opinions. Within his deposition, within the errata sheet attached thereto, and within his affidavit of February 15, 2005, Mr. Falb has expressed with certainty his opinion that the anterior-lateral blow was the blow that caused the injury.<sup>5</sup>

For example, in his sworn errata sheet which was before the court at the hearing, he stated,

Mr. Testerman did sustain more than one impact to his left shoulder at the time of the injury. The impact to the left posterior shoulder, upper back and rib area did occur but in my professional opinion it was not the primary cause of the injury he sustained to his left shoulder. However, this impact may have contributed in some way to the injury. It is my professional opinion, based upon personal experience and the viewing of the provided video and DVD, I concluded the cause of the injury sustained was the result of anterior and/or lateral impacts.

(JA-347).

This certainty was reiterated in his affidavit summing up his opinions, dated February 15, 2005. The affidavit, based on a review of a videotape enhanced by Riddell but only provided to Testerman after the hearing on the Motion in Limine to Exclude Expert Testimony, (JA-567), was further proof that Mr. Falb held his opinions with the requisite certainty. As Mr. Falb therein stated, "[i]n my opinion Mr. Testerman's shoulder fractures were caused by the anteriolateral blow to his shoulder by an opposing player." (JA-586).<sup>6</sup>

Thus, it is clear that Mr. Falb does hold opinions with certainty about the blow that caused this injury.

## **2. Mr. Falb's Opinion on the Relation of the Blow to the Pads**

The district court found that Mr. Falb did not state with certainty in his deposition that the injuring blow was to an area unprotected by pads. This is incorrect,

I believe, in my opinion, as I stated previously, had those pads been larger, thus sitting down on his shoulder a little bit more, it would have offered him more surface contact of the pad to distribute the blow. And it would have put this deltoid cap down lower, offering him more protection.

(JA-265).<sup>7</sup>

FN

A. The blow or blows that Troy Testerman sustained to his left shoulder that created the injury or produced the injury came from the lateral side. And most likely there is-I believe that some of it may have been the anterior. It would have struck the deltoid pad, in that area, and the foam pad that's in front of it.

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However, I think that, again, that cap, deltoid cap, did not come down adequately enough to protect that shoulder from a blow coming at that angle from which I think it came.

[Witness marks photographs where the blow occurred. Related questions omitted.]

Q. Now, as you have drawn the arrows on photograph three, and I believe as you indicated, as you testified, that blow was at least in part on the shoulder pad itself?

A. It would have been partially on the shoulder pad, but probably, in my opinion, more on the exposed arm just below it. Because, again, that deltoid pad is sticking up too far.

[Witness labels the deltoid pad. Related questions omitted.]

Q. Now, are you able to say what other pad would have in your opinion more adequately protected that area?

A. It is my opinion that had this man had a larger pad the entire pad would have been sitting on him, if you will, lower. Because if you notice the strap that goes under the armpit or the axilla is way too high, meaning those pads are too small and they're elevated.

Had he had a more appropriately fitting pad with a longer front and a bigger size, that arch would have come down further. He would not have had the strap in that axilla. Which when you put it on that way, in my opinion, it elevated it and it was elevated because it was too small.

(JA-631). The photographs referred to in this exchange and attached to Mr. Falb's deposition indicate that Mr. Falb was able to precisely indicate the location of the blow in relation to the pads. (JA-670).

In a discussion about the general functions of a shoulder pad, Mr. Falb notes that the secondary objective of a pad is to protect "the anterior, the middle, and the posterior portion of the deltoid." (JA-378). This discussion culminates in the following exchange:

Q. Didn't the pads that Troy Testerman had on cover that area?

A. I don't believe it covered it adequately.

(JA-654).

Mr. Falb further identifies the area of the blow in relation to the pads, "I think that had those pads not been so small they would have sat down on his shoulders a little bit lower, which would subsequently lower the deltoid cap and offer him more protection." (JA-264);

It's what I said before, is the fact that if the pad would have been larger, it would have come down on his chest, it would have offered him more protection on the deltoid area and given him more protection. Because the pad, as it shows in the photograph, is up way too high. It should have been lower. And when you lower that, you lower the deltoid cap. And he would have been offered more protection on the lateral aspect and the front of his shoulder.

(JA-266).

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Finally, the opinions discussed above are consistent with his deposition testimony that had Mr. Testerman been wearing properly fitting pads, he would have suffered at worst a contusion or bruise. (JA-292).

To this deposition testimony must be added Falb's sworn errata sheet where he again expresses his opinion with sufficient certainty:

It is my professional opinion, based upon the size and fit of the shoulder pads shown in the photographs of Mr. Testerman wearing the pads worn at the time of this injury, I can state, with a reasonable degree of certainty that had the pads Mr. Testerman was wearing been larger, it is reasonable to believe that this injury would have been less severe and may have resulted only in a severe contusion to his left shoulder. It is my professional opinion that had these pads been larger it would have lowered the pads on his anterior chest, offering more protection, and also given him more appropriate deltoid area protection.

(JA-347).

His February 15, 2005 affidavit likewise makes clear his certainty on this issue, “[i]n my opinion the area of his shoulder impacted by this anteriorlateral blow was left exposed at the time of the impact because his shoulder pads were too small, which caused them to ride up.” (JA-586).

Thus, Mr. Falb does make clear that it was the lack of padding in the area impacted that was a proximate cause of this injury. This opinion has been rendered with sufficient certainty and consistency to justify allowing Mr. Falb to testify and the district court erred in ignoring this fact.

**III. THE DISTRICT COURT IMPROPERLY ADOPTED THE CONCLUSIONS OF ONE OF RIDDELL'S EXPERT WITNESSES AS JUSTIFICATION FOR EXCLUDING FALB'S TESTIMONY.**

In its Memorandum Opinion, the district court sided with defense expert P.D. Halstead in noting that in its view of the videotape, Testerman fell to the ground with his elbow catching the brunt of the impact. The court then adopts Halstead's opinion that this impact was the cause of Testerman's injury.<sup>8</sup>

As tempting as it may have been for the court to review the tape and make conclusions about the mechanism of injury, and indeed Testerman argues below that a jury would be entitled to do so, the fact of the matter is in the context of a *Daubert* analysis, adoption of the opinion of one witness as a justification for the exclusion of another is improper. Indeed, having ruled in granting Riddell summary judgment that expert testimony is necessary to prove this case, (JA-577), it was improper for the district Court to then make its own non-expert findings about which blow on the video was a proximate cause and which expert to believe. The district court's adoption of the conclusions of Mr. Halstead was improper and provides no basis upon which to evaluate--much less exclude--Mr. Falb's testimony.

Four experts have reviewed this tape, a longtime trainer with a professional football team, (Falb), a longtime trainer for the University of Virginia (Gieck), a trained biomechanical engineer, (Van Ee), and a professional witness for Riddell, (Halstead). Only Mr. Halstead comes to the conclusion that the impact of the elbow to the ground was a cause of this injury.

Dr. Chris Van Ee, the other witness designated on this issue by Riddell, outlined in his report three possible “loading scenarios,” or blows to Testerman's body, only one of which was capable of causing Mr. Testerman's injury. (JA-171-172). Dr. Van Ee concluded that scenario one, the impact to the anterolateral shoulder, the same as that identified by Mr. Falb, was the blow that caused this injury,

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The nature of the [sic] Mr. Testerman's scapular fracture and the relative lack of injury to the body, spine, and acromial process of the scapula are most consistent with direct trauma to the anterior coracoid-glenoid neck region. [i.e., scenario one].

(JA-175).

Indeed, Dr. Van Ee specifically rejects Mr. Halstead's elbow theory, both in his report:

It is not clear from the video, if indeed there is any significant loading through his upper arm and into his shoulder during this loading scenario. If the loads were indeed great during this scenario the loading pattern would more likely result in a starburst or chip fracture of the glenoid fossa rather than the vertically oriented fracture that Mr. Testerman sustained.

(JA-172) (emphasis added), and in his deposition:

And a load coming up through the elbow I think axially through the humeral head is unlikely to result in that type of fracture pattern.

(JA-664).

Dr. Van Ee's deposition further justified his conclusions where he noted that the reaction of Mr. Testerman's body to the first loading scenario, the impact to the anterolateral shoulder, indicated that scenario one was the *only* impact significant enough to create this type of injury,

Q. So, your judgment is the initial contact is what- what causes this injury, that first hit?

A. Yes ...

Q. How did you judge the force? Did you do any calculations that helped you determine what it was?

A. I looked at the body of Mr. Testerman and how he was reacting and his body is-particularly his left shoulder area comes to a complete stop within a frame or two, which is on the order of thirty to sixty milliseconds.

(JA-662-663). Thus, Dr. Van Ee's report supports Mr. Falb's theory and directly undercuts that of the other defense expert, P.D. Halstead.

Finally, while Dr. Basamania has acknowledged the possibility of a role for an elbow impact in such an injury, he states that the elbow would have to be at a ninety-degree angle from the body at point of impact in order for an injury of this type and magnitude to have occurred. (JA-667-668). Dr. Basamania has not reviewed the videos in this case and does not venture to guess about the mechanism of injury here. A review of the videos, as well as the opinion of Dr. Van Ee reveals that the elbow did not hit the ground with the force or at the angle required and thus, Dr. Basamania's opinions likewise do not lend support to the elbow theory.

Thus, the fact that Mr. Falb and P.D. Halstead may disagree about the possibility of the fall on the elbow as a causative factor in this case does not justify excluding Mr. Falb's testimony, any more than it would exclude the other defense expert, Dr. Van Ee.

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Regardless of the factual issue, the *Daubert* gatekeeping scheme is not designed as a contest in which a court chooses one expert over another. “*Daubert* neither requires nor empowers trial courts to determine which of several competing scientific theories has the best provenance.” *Ruiz-Troche v. Pepsi Cola*, 161 F.3d 77, 85 (1st Cir. 1998).

As this Court has noted, the issue is not whether the expert is correct but whether the expert is reliable, “plaintiffs do not ‘have to prove their case twice -- they do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of evidence that their opinions are reliable.’ ” *Maryland Cas. Co. v. Thermo-O-Disc, Inc.*, 137 F.3d 780, 783 (4th Cir. 1998)(quoting, *In re Paolil R.R. Yard PCB Litigation*, 35 F.3d 717, 744 (3rd Cir. 1994)).

Testerman has shown by a preponderance of the evidence that Mr. Falb's evidence is reliable and the district court improperly measured the reliability of Mr. Falb's testimony by reference to the opinion of Mr. Halstead. This comparison improperly placed the burden on Testerman to prove that his expert was correct and not merely reliable.

The district court therefore erred as a matter of law in picking and choosing which of the expert opinions to adopt as its own. Testerman only had to show that Mr. Falb's opinion was reliable, not that it was correct. Because this error of law is an abuse of discretion, this Court should reverse and remand the case for trial.

#### **IV. THE DISTRICT COURT ERRED IN GRANTING SUMMARY JUDGMENT ON THE ASSUMPTION THAT EXPERT TESTIMONY WAS REQUIRED IN THIS SIMPLE NEGLIGENCE CASE.**

Riddell conceded in its memorandum in support of summary judgment that there are “disputed issues of fact as to whether the shoulder pads at issue fit” Testerman. (JA-68). Because Riddell fitted the pads, the only issue remaining for the district court was whether there were disputed issues of fact as to whether the improperly fitted pads were a proximate cause of Testerman's injury. In deciding this, a jury would be entitled to use its common sense in determining whether the improperly fitted pads were a proximate cause of Testerman's injury, and the question of proximate cause is an issue of fact to be resolved by a jury. *Cooper Industries v. Melendez*, 260 Va. 578, 537 S.E.2d 580 (2000). Because a genuine issue of material fact exists such that a jury could return a verdict for Testerman, the grant of summary judgment was error.

##### *A. Expert testimony on the issue of causation is not required to create a factual issue to be resolved by the jury.*

A critical assumption underlying the district court's grant of summary judgment is that expert testimony is somehow required in order to prove causation in this case. While this may have been the case were Testerman pursuing a products liability claim, see, *Hartwell v. Danek Medical, Inc.*, 47 F. Supp.2d 703 (W.D. Va. 1999), in this simple negligence matter, the testimony of Testerman, together with the other evidence and inferences drawn therefrom, is enough to place the issue of causation before the jury. As the Supreme Court of Virginia stated in *Sumner v. Smith*, 220 Va. 222, 226, 257 S.E.2d 825, \_\_\_\_ (1979),

While failure or inability to adduce direct medical evidence, generally relied upon to establish causal connection between injury and accident, may significantly increase the plaintiff's risk of nonpersuasion, such evidence is not a prerequisite to recovery. The testimony of the plaintiff alone, taken with all reasonable inferences which could be drawn from his testimony and from the medical evidence in the case, presented a jury issue as to causal connection.

*Id.*, 220 Va. at 226, 257 S.E.2d at \_\_\_\_\_. See also, *Norfolk and Western RR Co. v. Chittum*, 251 Va. 408, 415, 468 S.E.2d 877, \_\_\_\_ (1996) (Plaintiffs own testimony was sufficient to create a jury issue regarding causation); *Peterson v. Neme*, 222 Va. 477, 483, 281 S.E.2d 869, 872 (1981) (“It is implicit in our holding in *Sumner v. Smith*, [citation omitted], that lay testimony of causal connection between an automobile accident and injury is admissible for whatever weight the fact finder may choose to give it, even when medical testimony fails to establish causal connection expressly.”)

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In its brief below, Riddell cited *Fitzgerald v. Manning*, 679 F.2d 341 (4th Cir. 1982), for the proposition that federal procedural rules control this issue and that therefore Testerman cited an incorrect standard of law. However, what constitutes a *prima facie* case of negligence is determined by state law, *Id.*, *Blevins v. Sheshadri*, 313 F. Supp. 2d 598, 601 (W.D. Va. 2004) (in a diversity case, substantive elements of the negligence claim are questions of state law), and therefore, Virginia law determines whether Testerman can make out a *prima facie* case without expert testimony.

***B. Testerman has made out a prima facie case of negligence and the grant of summary judgment was error.***

As explained more fully above, the exclusion of the testimony of Testerman's expert, Kent Falb, was an abuse of discretion and summary judgment in reliance on that exclusion is likewise error.

Even without Falb, there was sufficient proof to prove a case of negligence against Riddell. In order to prove negligence, Testerman has to show that Riddell was negligent and that the negligence was a proximate cause of his injuries. A jury should be entitled to hear the testimony of Troy Testerman on how his injury occurred, view the photographs of Troy Testerman wearing the pads, (JA-669-672), view the videotape of the tackle that caused the injury, (JA-Video), and hear the testimony of Mr. Testerman's treating physician, Dr. Carl Basamania, (JA-665-668), to determine the issue of proximate cause. The district court erred in granting summary judgment in this case merely because it had (erroneously) excluded the testimony of Kent Falb.

Specifically, giving Testerman all reasonable inferences, the evidence demonstrates the following:

1. Riddell, through its agent Chris Williams, fit Testerman with new shoulder pads (accepted as true by Riddell, JA-62);
2. The shoulder pads did not fit properly, (Riddell admits that there are contested issues of fact on this issue, JA-68; the pads themselves, the photographs of Testerman wearing the pads, (JA-669-672), Testerman admits that he had not worn this type of pads before (JA-435);
3. Testerman was injured while wearing the pads, (JA-Video);
4. The play on which he was hit was not significant or unusual, (JA-Video);
5. The hit to his anterior-lateral area was the cause of the injury, (Van Ee);
6. Because of the angle in which he fell, Testerman was not injured by the force of his elbow hitting the ground. (Basamania, Van Ee).

With this evidence, viewed in the light most favorable to Testerman, a jury could have compared how the pads sat on his body, the description of the hit that caused the injury vis-a-vis the pads, and determined that the ill-fitting pads were the cause of this injury. This was clearly a reasonable inference that a jury could draw from the evidence outlined above. Virginia law clearly permits lay testimony on this causal connection, *Sumner, supra*. Thus, the evidence, when viewed in the light most favorable to Testerman, was that the original negligence in fitting Testerman with pads that were too small for his size was the cause of his devastating injury.

The district court incorrectly stated that there was "no admissible evidence" demonstrating the precise location on Testerman's body where the injuring impact occurred, and that therefore he could not show that the injury was caused by the pads. This completely ignores the evidence before the court of Dr. Van Ee's opinion. See, *Matsushita Elec. Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (In the context of summary judgment determinations, the court must review the record "taken as a whole."); *Reeves v. Sanderson Plumbing Products, Inc.*, 530 U.S. 133, 150 (2000) ("[I]n entertaining a motion for judgment as a matter of law, [which mirrors the standard for summary judgment], the court should review all of the evidence in the

**Troy TESTERMAN, Plaintiff-Appellant, v. RIDDELL,..., 2005 WL 1842457...**

record.”)(citing *Matsushita*). Dr. Van Ee states definitively, as did Falb, that the impact to the anterolateral shoulder was where the injuring impact occurred. (JA-175).

Thus, on every issue necessary to prove negligence, there was evidence in the record before the court upon which “a reasonable jury could return a verdict for” Testerman. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242 (1986).

Because there were genuine issues of material fact and because Testerman presented a *prima facie* case on every necessary element of negligence, the district court erred in granting summary judgment in favor of Riddell.

## **CONCLUSION**

Because the district court erred in refusing to consider new evidence, because it erred in granting Riddell's Motion in Limine to exclude the testimony of Kent Falb, and because it erred granting summary judgment based thereon, this Court should reverse the judgment below and remand for trial.

## **REQUEST FOR ORAL ARGUMENT**

Testerman requests to argue this brief orally to the Court.

### **Footnotes**

- 1 Testerman has dropped his products liability claim.
- 2 Although this appeal centers around the exclusion of Testerman's expert Kent Falb, a brief discussion of the other experts designated in this case is necessary because of certain rulings by the district court.
- 3 Riddell also designated a witness on the product liability issue, which is not relevant here.
- 4 Testerman imputes no motive to Riddell's failure to make this evidence available or disclose its existence prior to the hearing and accepts counsel's claim that this was an oversight. This inadvertence does not ameliorate the prejudice Testerman suffered by not having it available for his expert prior to the hearing.
- 5 Testerman will not burden the Court with a rehash of every instance in which Mr. Falb expressed his opinion. This is fully recounted in Testerman's brief in opposition to the Motion in Limine (JA-318-337) and his Amended Memo to reconsider. (JA-626-637).
- 6 Not before the district court at the time of the hearing, but supplemented in the Motion to Reconsider was this quote from his deposition,  
The blow or blows that Troy Testerman sustained to his left shoulder that created the injury or produced the injury came from the lateral side. And most likely there is-I believe that some of it may have been the anterior. It would have struck the deltoid pad, in that area, and the foam pad that's in front of it.  
However, I think that, again, that cap, deltoid cap, did not come down adequately enough to protect that shoulder from a blow coming at that angle from which I think it came.  
(JA-631).
- 7 Indeed, this is even more clearly shown in another part of his deposition, not provided to the court until the Motion to Reconsider, where Mr. Falb does identify the area impacted as one not protected by padding,  
Q. ...Where I think we left off, I was asking you to look at those pictures and tell me where you believe the blow occurred that caused his injury. And you were starting to tell me about the back first.
- 8 The court cites the opinion of defense expert Halstead for the proposition that the injury was caused by the impact of the elbow on the ground which no pad could protect. It then concluded, “[t]herefore, considering that [Testerman]'s injury may have resulted from an impact to an area which would have been unprotected regardless of the size of his shoulder pads (i.e., his elbow), I find that Falb's uncertainty as to the location of the blow only enhances the unreliability of his opinions.” (JA-572)

1 STATE OF WISCONSIN CIRCUIT COURT DANE COUNTY  
2 Branch 11

3 STATE OF WISCONSIN,

4 Plaintiff,

5 vs.

6 Case No. 96 CF 555

7 AUDREY A. EDMUNDS,

8 Defendant.

9

10 DATE: January 25, 2007

11 BEFORE: The Honorable DANIEL R. MOESER

12 PROCEEDINGS: Evidentiary Hearing (Day 1)

13 APPEARANCES: MARY ELLEN KARST and SHELLY RUSCH,  
14 Assistant District Attorneys, Dane  
15 County, Wisconsin, appeared on  
16 behalf of the State of Wisconsin.

17 KEITH A. FINDLEY, Attorney at Law,  
18 Wisconsin Innocence Project,  
19 University of Wisconsin Law School,  
20 Madison, Wisconsin, appeared on  
21 behalf of the Defendant.

22  
23 COPY  
24

DISTRICT ATTORNEY  
DANE COUNTY

25 ANN M. ALBERT, RMR  
Court Reporter

07 FEB-2 PM12:47

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EXHIBIT

1

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1                   THE COURT: 4 through 10 are received.

2                   Mr. Findley, what time do you have your next witness  
3                   scheduled for?

4                   MR. FINDLEY: Available anytime.

5                   THE COURT: Okay. Like 1:15? Does that work  
6                   for you?

7                   MR. FINDLEY: That would be fine.

8                   THE COURT: Is that okay for the state?

9                   MS. KARST: Yes, sir.

10                  THE COURT: Okay. We'll see you at 1:15. Thank  
11                  you all. Thank you, Doctor.

12                  (Recess)

13                  THE COURT: I think we're all here and we're  
14                  ready to go. We're ready for the next witness by the  
15                  defense.

16                  MR. FINDLEY: Your Honor, I'd call Dr. George  
17                  Nichols.

18                  THE COURT: Sir, you would come up here, please,  
19                  and raise your right hand to be sworn by the clerk.

20                  GEORGE NICHOLS,

21                  called as a witness, having been first duly  
22                  sworn, was examined and testified as follows:

23                  THE COURT: And have a seat up here, please.

24                  DR. NICHOLS: Thank you, your Honor.

25                  THE COURT: And there's water here if you would

1 like some. And the microphone will pick you up, I  
2 think, so just be comfortable. Go ahead, Mr. Findley.

3 MR. FINDLEY: Thank you.

4 DIRECT EXAMINATION BY MR. FINDLEY:

5 Q Could you please state your name and spell your last  
6 name for the record?

7 A My name is George Riley Nichols, II, spelled  
8 N-i-c-h-o-l-s.

9 Q What is your profession?

10 A I'm a physician, a pathologist, specifically, a  
11 forensic pathologist.

12 Q And what does that mean, a forensic pathologist?

13 A Well, the word "pathology" means the study of human  
14 disease and the body's reaction to that disease  
15 process. The word "forensic" means law applied.  
16 Therefore, theoretically, anything having to do with  
17 the law and human disease the is purview of a forensic  
18 pathologist.

19 In actuality and in practice, the vast amount of a  
20 forensic pathologist's professional time is spent in  
21 an attempt to determine how a person passes from alive  
22 to dead.

23 Q And do you have a medical degree?

24 A Yes. I graduated from the University of Louisville  
25 School of Medicine in 1972. I completed my training

1           in anatomical and clinical pathology in 1976. I  
2           completed a fellowship in forensic medicine.

3       Q    And are you presently licensed in any states?

4       A    Yes, I'm licensed to practice medicine in Kentucky and  
5           Ohio.

6       Q    Do you have any certifications?

7       A    Yes, I'm certified by the American Board of Pathology  
8           to have competency in three fields of pathology. The  
9           first is anatomic pathology. This is how the organs,  
10           structures and tissues of the body relate to disease  
11           or to healthy. An anatomic pathologist is the doctor  
12           who interprets your tissue biopsy or your pap smear.

13           My next field of competency is clinical pathology.  
14           This is basically the study of human biological  
15           fluids. The clinical pathologist is the doctor in  
16           charge of the laboratory which the blood that is  
17           removed from your arm is taken and is analyzed.

18           And lastly, I'm certified in forensic pathology,  
19           which we've already discussed.

20       Q    What is your current position?

21       A    I am the operator of a medical-legal consulting firm,  
22           Commonwealth Medical Legal Services. There are three  
23           other persons who work there. They all are support  
24           staff for me. I provide answers to questions from  
25           persons and things that ask me.

1 Q Any other current professional positions?

2 A I hold an academic appointment at the University of  
3 Louisville School of Medicine in the Department of  
4 Pathology at the level of clinical professor and in  
5 the Department of Pediatrics at the level of clinical  
6 associate professor.

7 Q And do you hold any elected or positions in your  
8 profession?

9 A Elected? I mean, at one time I was a member -- on two  
10 occasions I've been a member of the board of directors  
11 of the National Association of Medical Examiners, if  
12 that's what you're referring to.

13 Q That's fine. What -- could you summarize your prior  
14 employment history?

15 A Certainly. On July 1, 1977, I was appointed by  
16 then-governor Julian B. Carroll to become the first  
17 chief medical examiner, a position which I held  
18 continuously under six governors, retiring from that  
19 position on September 1, 1997. As a medical examiner,  
20 I was in charge of a portion of the government of the  
21 state of Kentucky. When I started in 1977, I was the  
22 only forensic pathologist in the state.

23 By the activities of the Kentucky General  
24 Assembly, when I left 20 years later, there were four  
25 different centers throughout the state, employing 11

1 forensic pathologist and other Ph.D.-level employees.

2 So that's what I did for 20 years.

3 Q During those 20 years as chief medical examiner for  
4 the state of Kentucky, can you estimate how many  
5 autopsies you did?

6 A During my entire career, counting my residency,  
7 fellowship and my activities as the chief medical  
8 examiner, I estimate that I have performed at least  
9 10,000 postmortem examinations and that I have  
10 supervised another 30,000 autopsies.

11 Q And any estimate on how many of those involved  
12 infants?

13 A Clearly hundreds, if not more.

14 Q And in addition to that, in your work, have you seen  
15 children who were seriously injured who did not die?

16 A Yes. I began performing what's called clinical  
17 forensic medicine in 1990. That's why I'm on the  
18 staff of Kosair Children's Hospital, the children's  
19 hospital in the city of Louisville. From 1995 until  
20 2002, I had started a program involving cross-training  
21 emergency medical physicians and the forensic  
22 pathologist, and then augmented that with three nurses  
23 who were trained and equipped to function basically as  
24 physician extenders or expanders to evaluate abused  
25 children and questions of injured adults, including

1 some of them injured -- injuries supposedly at the  
2 hand of sworn officers and, conversely, injuries to  
3 sworn officers when on duty. So, yes, I've seen  
4 hundreds of cases of clinical forensic medicine in  
5 which there are injuries to infants, older children,  
6 and adults.

7 Q Thank you. If I could get this marked, please.

8 (Exhibit 12 marked for identification)

9 Q Dr. Nichols, I'm showing you what's been marked as  
10 Exhibit Number 12. Can you identify this document,  
11 please?

12 A It is a curriculum vitae dated the -- in February,  
13 2005.

14 Q Is that curriculum vitae an accurate representation  
15 summary of your professional credentials, your  
16 education, your training and experience, at least up  
17 through February of 2005?

18 A Yes.

19 Q And are there any significant additions that should be  
20 made to that to reflect the intervening two years?

21 A Well, I'm no longer the medical director of Laboratory  
22 Physicians, Incorporated. That was the anatomic  
23 pathology laboratory which I founded and directed from  
24 1977 until I sold it on March 1, 2006, to Norton  
25 Health Care, the largest health care provider in the

1 greater Louisville area.

2 MR. FINDLEY: Your Honor, I'd move Exhibit  
3 Number 12.

4 THE COURT: Any objection? Any objection by the  
5 state to Exhibit 12?

6 MS. RUSCH: Oh, no, your Honor. I'm sorry.

7 THE COURT: 12 is received.

8 MR. FINDLEY: Thank you.

9 Q During the time you've worked as a forensic  
10 pathologist, have you ever come to the conclusion  
11 after doing an autopsy that an infant was the victim  
12 of Shaken Baby Syndrome or Shaken Impact Syndrome?

13 A Yes, I have concluded that an infant died as a result  
14 of Shaken Baby Syndrome. I do not believe I have ever  
15 used the term "Shaken Impact Syndrome" in my career.

16 Q And why is that?

17 A I don't know if you have evidence that a child has  
18 been impacted. There's an even -- unless there's  
19 visual representations that a shake preceded it, then  
20 there's no proof physiologically or anatomically that  
21 a shake was necessary to produce an injury which can  
22 be accounted for by impact.

23 Q And what led you -- in the cases where you concluded  
24 that there was Shaken Baby Syndrome, what lead you to  
25 reach that conclusion?

1 A The medical literature as it existed at that time in a  
2 child who had minimal injury to his scalp -- her  
3 scalp, excuse me -- with acute cerebral edema, thin  
4 bilateral subdural hematomas over the convexities,  
5 retinal hemorrhages and grab marks on the -- excuse me  
6 -- circular contusions, which I termed as grab marks,  
7 on the arms. The child died as a result of  
8 progressive cerebral edema. I performed a postmortem  
9 examination and I testified in Warren Circuit Court in  
10 Bowling Green, Kentucky in I believe 1980 that Amanda  
11 Carroll died as a result of Shaken Baby Syndrome.

12 Q Have you diagnosed anyone with Shaken Baby Syndrome  
13 since?

14 A Not that I'm aware of. I may have, but if so, I'm  
15 unaware of it.

16 Q And do I understand correctly that you're basically  
17 describing a case in which the case presented the  
18 classic triad of presenting signs, that is,  
19 essentially, subdural hematoma, retinal hemorrhages,  
20 brain swelling, plus, in this case, signs of having  
21 grabbed the child to do the shaking? Is that a  
22 correct summary?

23 A Yes.

24 Q Doctor, can I ask you just really briefly, are you  
25 being paid for your testimony or your review of the

1 files in this case?

2 A No.

3 Q I'm going to be asking you some opinions today, and  
4 I'd like to ask you if you can answer those opinions,  
5 those questions, to a reasonable degree of medical  
6 certainty, and if you can't do that, if you'll let us  
7 know that.

8 A Medical certainty as defined in this state is what?  
9 Fifty-one percent or greater, or is it the medical  
10 certainty as defined in medicine, which is 95 percent  
11 or greater? That's how the statistics are used in  
12 medical laboratories to define whether a test is  
13 normal or not.

14 Q When you offer an opinion, what are you comfortable --  
15 what level of certainty do you feel is justified as a  
16 scientist, as a medical doctor?

17 A It depends upon the question that is being asked.  
18 Some of them are answerable only with medical  
19 probability. Some of them are answerable at the level  
20 of 95 percent threshold. That would be medical  
21 certainty defined medically.

22 Q And will you let us know which it is as we proceed?

23 A Certainly.

24 Q Okay. Now, are you familiar with the literature in  
25 the medical community regarding Shaken Baby Syndrome

1           in general, but also, more broadly, perhaps, infant  
2           death related to brain injury?

3           A    Yes, I am. And specifically, we can go back to the  
4           first article by Caffey, and before that, an article  
5           in the British Medical Journal.

6           Q    And how far back are you talking?

7           A    Caffey, 1972, American Journal of Diseases of  
8           Childhood, and the British Medical Journal, 1971.

9           Q    And do you continue to be current on the state of the  
10           literature on these subjects?

11           A    I certainly attempt to, and my Google account is set  
12           up so that once a week, Google notifies me of any  
13           mention of Shaken Baby Syndrome, Shaken Impact  
14           Syndrome or any papers on traumatic injuries to the  
15           brains of children and infants.

16           Q    And do you read that literature?

17           A    Yes.

18           Q    Dr. Nichols, can you tell us, have there been changes  
19           in the -- in the literature and research on Shaken  
20           Baby Syndrome in recent years?

21           A    Yes.

22           Q    Can you describe to us what those changes have been?

23           A    Well, first, Caffey published a paper in which he  
24           theorized that shaking of infants would be a mechanism  
25           by which injuries to the brain of an infant could

1           occur. And subsequent to that, there have been quite  
2           a substantial number of papers, mainly anecdotal, some  
3           of them based upon the determination of shaken --  
4           shaking as the cause of injury, either by confession  
5           or conviction. And finally, there were a series of  
6           articles that were published by others,  
7           neuroscientists, neurosurgeons, biomedical people, in  
8           which the question of whether or not a human being can  
9           produce the amount of force that's necessary to  
10          produce a fatal shake injury in an infant can actually  
11          be performed by human beings.

12          Q   And can you tell me what was the general understanding  
13          in the medical community in particular among forensic  
14          pathologists about the significance of the triad of  
15          signs, including subdural hematoma, retinal  
16          hemorrhages, and brain injury or brain swelling?

17          A   The vast majority of forensic pathologists in practice  
18          in the United States are members of the National  
19          Association of Medical Examiners. At one of our  
20          annual meetings held at a resort in South Carolina, we  
21          listened for three hours one evening to Mary Elizabeth  
22          Schmidt Case.

23          Q   Can you give us a time frame?

24          A   Probably early to mid eighties. Dr. Case gave a  
25          presentation on fatal head injury in children and

1           infants. And there, we listened to Dr. Case as she  
2           explained to us about shaking injuries, about the  
3           constellation, the constellation of findings that are  
4           seen with shaking injuries and the fact that shaking  
5           injuries are -- were thought to be associated with  
6           sudden cessation of conscious activity and  
7           catastrophic neurologic outcome immediately.

8           I knew Dr. Case, still know Dr. Case. I respected  
9           her opinions. I thought that she was a smart and  
10           conscientious person who was attempting to educate the  
11           rest of us to the level that we needed to be. I  
12           believed that the shake injury did indeed cause this  
13           type of neurologic outcome.

14           Since then, I've studied a series of papers. I  
15           first became -- I first heard of the other side of  
16           some other means of trying to explain head injury in  
17           children when I was asked by the prosecuting attorney  
18           to sit at -- behind his first assistant during a  
19           physical assault case involving an infant with a head  
20           injury who had survived, and I was there specifically  
21           to listen to Dr. John Plunkett to attempt to help the  
22           first assistant prosecutor to find holes in his  
23           arguments and to help them with the formulation of  
24           questions.

25           Well, I listened to Dr. Plunkett, and I had heard

1           of him before, and I thought he was a first-class nut.  
2           But then I listened to his presentation, and he cited  
3           paper after paper after paper, and he cited papers by  
4           authors that I had never heard of, including journals  
5           I don't think I had ever seen before.

6           So I made myself, after a transcript had been  
7           prepared, seek these articles out and then to read  
8           them. Well, I read them, but I can't say that I  
9           really understood them when I read them until I went  
10           back and did some basic physics. Again, most  
11           physicians are not much in the way of physicists. We  
12           take enough so we can get into medical school, and  
13           that's it, myself included.

14           So I learned, re-learned, I guess, or maybe I  
15           learned for the first time some of -- enough physics  
16           so that I could understand some of these papers, and  
17           it was apparent that from the biomechanical people  
18           that they were unsure that the injury could be  
19           produced as the result of shaking.

20           And it's clear that the literature today has not  
21           supported the initial theory of Dr. Caffey that a  
22           shake alone can produce an injury without a  
23           significant injury to the cervical spine, including  
24           the cervical spinal cord. Rather, other studies have  
25           shown that it is the stopping of the moving head, an

1           impact that will generate the types and directions of  
2           forces that are necessary to cause catastrophic brain  
3           injury in infants.

4           Q    So what time period was this in which you began  
5                   reevaluating your position on this?

6           A    '98, I believe, maybe as early as '97.

7           Q    And prior to that, was it generally accepted in the  
8                   medical community, including the community of forensic  
9                   pathologists, that the triad of signs that we've  
10                  discussed are always diagnostic of either shaking or  
11                  impact injury?

12           A    Yes. I mean, intuitively, it should be harmful to an  
13                  infant to violently shake it. Just -- I mean, we  
14                  should all know that. You don't do that, 'cause it's  
15                  one of those things like your mother tells you, don't  
16                  eat that mushroom. Don't shake the baby. So we find  
17                  a grass point, we find injury to -- internal injuries  
18                  to brain and other tissues nearby. It must be as a  
19                  result of a shake.

20                   Rather, I believe that the injuries, if they  
21                  occur, are more frequently as the result of an impact,  
22                  and I don't believe anybody has yet proved that  
23                  Dr. Caffey's theory is indeed valid.

24           Q    And since you have come to this realization post-1998  
25                  or thereabouts, is that prior theory still universally

1           accepted or nearly so in the medical community in  
2           particular among forensic pathologists?

3       A    No, it is not. The old acceptance of Shaken Baby  
4           Syndrome is not held to be correct. At the most  
5           recent meeting of the National Association of Medical  
6           Examiners in San Antonio, there was a move by one of  
7           the supporters of Shaken Baby Syndrome theory to  
8           reinstate the National Association of Medical  
9           Examiners' position paper on SBS, which had expired.  
10          That was -- as far as I know, that was not passed by  
11           the executive committee. It therefore was not  
12           presented to the business meeting of the entire  
13           membership of name.

14       Q    And you've been talking about Shaken Baby Syndrome and  
15           then separately about impact. What I want to find --  
16           what I want to understand is prior to 1998 or  
17           thereabouts, was it part of the accepted wisdom in the  
18           medical community that the triad of signs we've been  
19           discussing are always symptomatic or also diagnostic,  
20           rather, of either Shaken Baby Syndrome or impact, that  
21           those can only be created by one of those mechanisms?

22       A    Yes.

23       Q    And is that currently the understanding in the medical  
24           community?

25       A    No.

1 Q How has that changed?

2 A That we've seen things that have probably been  
3 recognized, both that had not been recognized that can  
4 be associated with a similar presentation. There's  
5 one report of increased intracranial pressure that is  
6 just with choking, that at least on a computer model  
7 is substantially elevated enough to cause rupture of  
8 capillaries, resulting in blood loss within the eye  
9 and blood loss within the cranium.

10 There is a re-recognition of spontaneous  
11 thromboses of the dural venous sinuses which can occur  
12 in a small number of people, infants, and are, when  
13 they occur, associated with obstruction of the blood  
14 flow from the brain, resulting in similar types of  
15 findings.

16 There are other forms of, rather than clotting,  
17 but of bleeding, which may occur in which there will  
18 be similar findings of leakage of blood from blood  
19 vessels in the head and in the eye.

20 Q Before moving on, I want to ask you a little bit more  
21 about these biomechanical studies you referred to. I  
22 take it that the ones that you discussed that were in  
23 journals you'd never heard of and by authors you'd  
24 never heard of, were those journals, was that -- were  
25 those articles, rather, generally read or available or

1                   noticed by the medical community prior to 1998 or so?

2       A    I don't know about the whole medical community. I can  
3                   talk about the forensic pathologist, myself  
4                   specifically. I guess I can talk about my wife, but  
5                   she's a cancer doctor, so that doesn't count. I don't  
6                   know how far they penetrate.

7                   I know that very few forensic pathologists are  
8                   going to read the Journal of Neurosurgery. You know,  
9                   that's not what I would routinely read. I would be  
10                  reading pathologic journals. I might be reading  
11                  journals that are of general nature, such as New  
12                  England Journal of Medicine and The Journal of the  
13                  American Medical Association, but I don't know that I  
14                  would routinely read these things.

15                  Computer systems also weren't set up to bring  
16                  these materials to the attention of the proposed  
17                  reader as they are today.

18       Q    And has that changed? Have those kinds of studies  
19                  infiltrated? Have they become a part of and more  
20                  accessible to the community of forensic pathologists?

21       A    I believe the forensic pathologists have attempted to  
22                  study the issue of Shaken Baby Syndrome so that they  
23                  may give an informed opinion to police, parents,  
24                  attorneys and judges.

25       Q    And has there been -- you talked about the fact that

1           we now have studies that indicate that the triad of  
2           signs -- subdural hematomas, retinal bleeding, the  
3           brain swelling -- are not exclusively diagnostic of  
4           Shaken Baby Syndrome or impact, that other things can  
5           cause that. Is that a fairly recent development in  
6           the medical research and literature?

7           A Yes, I believe that the investigation of potential  
8           causes other than Shaken Baby Syndrome or shaken with  
9           impact, whatever that is, has changed.

10          Q And since when, approximately?

11          A Since at least '98.

12          Q And is this related in part to the development of the  
13           evidence-based medicine approach?

14          A Yes, that -- there was Donahue's paper in 2003 in the  
15           American Journal of Forensic Medicine and Pathology in  
16           which he directly reviewed a series of articles  
17           concerning Shaken Baby Syndrome to analyze the means,  
18           the scientific means by which the results were  
19           compiled. And his review was rather scathing of the  
20           science that was imparted in the methodology in most  
21           of the previously published materials, so that's --  
22           and it's ongoing, at least my most recently reviewed.  
23           Similarly, the methods by which results had been  
24           compiled in other ongoing papers that were either  
25           anecdotal, were based upon outcomes, either

1                   convictions or confessions, to prove that indeed the  
2                   mechanism was that of the shake.

3           Q    Based on this research that's emerged since the mid  
4                   1990s, if presented today with a case presenting the  
5                   triad of signs, would you still diagnose that as  
6                   Shaken Baby Syndrome?

7           A    Well, the first thing I would do is I would make sure  
8                   that there was a whole bunch of stuff done. If it's a  
9                   fatality, I would, before the child's alive, I would  
10                  make sure that a coagulopathy workup would have been  
11                  done correctly. Because of what we can now see -- not  
12                  "we," 'cause I'm not one of "we" -- what the pediatric  
13                  radiologist can now see using MRI would make sure that  
14                  an MRI was done before all. I would make sure that as  
15                  the dissection occurs during the autopsy that the dura  
16                  is left intact on the brain, separated from the inner  
17                  surface of the skullcap by finger dissection rather  
18                  than just ripping the dura off so that I can actually  
19                  see any bridging veins which may be present that have  
20                  been injured, if they've been injured, and to see --  
21                  to check the patency of the dural venous system to see  
22                  whether or not a dural thrombus has occurred.

23           Q    And that's a what?

24           A    Dural venous thrombus.

25           Q    Which is -- can you define that?

1 A Certainly. The big blood vessels in the head, the  
2 veins in the head, are dural venous sinuses as opposed  
3 to your other sinus, and they, like any other blood  
4 vessel, can produce, if you would like, clots.  
5 They're actually thrombi rather than clots, but for  
6 our purposes, it's a clot. And if you -- if a clot  
7 occurs and there's obstruction of blood flow through  
8 that vessel, then whatever portion of the brain that  
9 is supposed to have its blood drained through there  
10 can't happen, so the blood flow is -- has a mechanical  
11 obstruction now, the net result of which is tissue  
12 damage with injury to the brain on a basis of two  
13 things.

14 Number one, we can't get the good stuff to the  
15 neurons and other tissues that's necessary. We can't  
16 deliver oxygen, we can't deliver glucose.

17 Number two, we do not remove the toxic metabolic  
18 products that happen on a daily and hourly and  
19 minute-by-minute basis inside of each cell as it  
20 lives. We make toxic materials. So we have a  
21 delivery problem, and simultaneously, we have a  
22 take-away problem, augmenting the injury to the -- to  
23 each of the cells in the brain.

24 Q Are there other things that you'd want to have done or  
25 to evaluate?

1 A Certainly, those at a minimum should be done these  
2 days. Then I would make sure that I was the person  
3 who carefully removed and examined the dura; that I  
4 being the pathologist would be the person who  
5 carefully removed and examined the brain; that a  
6 series of photographs would have been taken through  
7 this entire dissection by someone other than me,  
8 because I'm busy with other tasks; that the brain  
9 would have a beginning external examination by me, but  
10 then the brain would be suspended in a solution of  
11 preservatives, and it would be dissected with my  
12 attendance by a certified neuropathologist.

13 Q And what would be your purpose in doing all of --  
14 taking all of these precautions, looking at all of  
15 these alternative things you've been describing?

16 A To see if something that may not be recognized is not  
17 only recognizable, but present.

18 Q Because there might be other causes for the signs  
19 other than shaking or impact. Is that what you're  
20 saying?

21 A Yes.

22 Q During the 1996 trial in this case, Dr. Perloff stated  
23 that Natalie Beard's injuries were the equivalent to a  
24 fall from a two-story building. Other doctors  
25 testified it was more like a three- or four-story

1 fall. Are you familiar with that kind of testimony?

2 A Yes. It's a portion of the dogma of the Shaken Baby  
3 Syndrome advocates.

4 Q And is there a scientific basis for that testimony?

5 A None. People have sustained severe neurologic injury  
6 from distances shorter than two stories or three or  
7 four stories. Conversely, people have fallen and  
8 sustained minimal, if any, neurologic injury from  
9 three or four stories. Depends upon the conditions on  
10 that particular day. So there is no basis that I'm  
11 aware of that can in any way relate the velocity or  
12 height of fall to the amount of energy that's imparted  
13 in any of these events.

14 Q And have people suffered these kinds of injuries and  
15 eventually died as a result of much shorter falls?

16 A Certainly.

17 Q And is this -- is this something that is a part of the  
18 -- this realization, this understanding about the  
19 distance of fall and the fact that there's -- you  
20 can't equate it in that way, is that something that's  
21 emerged in recent years through some of the more  
22 recent studies?

23 A Well, I believe so, and probably some common sense.

24 THE COURT: Let me interrupt a minute,  
25 Mr. Findley. I'm sorry. I've been handed a note that

1 someone in the audience is tape-recording the  
2 proceeding. I don't know who that is or who they are  
3 or what the purpose is.

4 UNIDENTIFIED SPECTATOR: I'm a reporter with the  
5 Wisconsin State Journal.

6 THE COURT: Okay. No problem. Keep going.

7 BY MR. FINDLEY:

8 Q I want to talk to you about this specific case  
9 involving Natalie Beard. Have you reviewed any  
10 materials related to this case?

11 A Yes. I received on August 2, 2005, medical records  
12 from University of Wisconsin Hospital; medical records  
13 from St. Mary's Hospital; an ambulance run from the  
14 Dane County EMS; Dane County Coroner investigation of  
15 death forms; autopsy report W95-294-F; emergency  
16 dispatch report of the Waunakee -- is that how it's  
17 pronounced -- EMS; the Dane County Sheriff records,  
18 interviews and photographs. Then by a fax, I received  
19 on the 8th of August, 2005, a preliminary report by  
20 John Galaznik. Then on the 30th of September by  
21 e-mail, I received a report from John Plunkett.

22 Then on the 31st of October, 2005, I received a  
23 total of 38 microscopic slides, all concerning autopsy  
24 95-294-F, slides 1 through 20, 37 through 42 and B-M.  
25 The -- several of these slides were fractured and

1 splintered in multiple pieces. Many of them had been  
2 overly heated so that the transparency of the tissues  
3 had been distorted and destroyed. They were not the  
4 best set of slides that I've seen in my 30 years as  
5 being a pathologist.

6 Q Now, these are slides from the infant in this case,  
7 biologic material from her?

8 A Yes, slides from the tissues of Natalie Beard.

9 Q Okay. Anything else?

10 A I received on the 13th of February, 2006, a draft of  
11 an affidavit for me to review and sign; and on  
12 December 6 -- sorry -- December 5, 2006, a brief in  
13 opposition to defendant's motion for a new trial; and  
14 then on the 20th of January, three articles were sent  
15 to me concerning an infant head injury.

16 Q Based on your review of the case materials involved in  
17 this particular case, can you tell me what would you  
18 have diagnosed this -- what would your diagnosis in  
19 this particular case have been based on the knowledge  
20 that was available to you in 1996?

21 A It would have been hypoxic ischemic brain injury due  
22 to a choking event due to asphyxia from formula. And  
23 the reason why I would have come to that conclusion is  
24 that the attendant noticed some type of abnormal  
25 breathing.

1 Q I'm talking -- this is what you would have said in  
2 1996 at the time this case was tried?

3 A Yes.

4 Q Okay.

5 A The attendant person noticed that there was some type  
6 of abnormal breathing that was ongoing; that 911 was  
7 called; that the first responder, a police officer,  
8 got there and noticed that there was a large quantity  
9 of formula in the nose and mouth of the infant. He  
10 cleared that material. Subsequent to that, the child  
11 lost breathing. EMS got there. It was transported,  
12 eventually was intubated. No one saw any formula  
13 during the course of the intubation.

14 Before the intubation, a mask had been used to do  
15 CPR. This will remove any formula that would be  
16 present and push it down into the lungs past the  
17 bifurcation of the bronchi. If you look at the  
18 medical record in the hospital, the child developed a  
19 blood-tinged froth hours after the admission, had an  
20 abnormal chest x-ray appearance, and I believe that  
21 that represents an aspiration pneumonitis. The  
22 material that's aspirated, formula, would be sterile  
23 rather than filled with bacteria, but it would -- its  
24 chemical composition clearly has a substantial amount  
25 of lipids or fats within it, which is highly toxic to

1           the respiratory tract, so there's a chemical injury  
2           that's being induced in the lung. So that's what I  
3           would have said.

4           I also would have said that there's an -- about a  
5           half-inch-diameter bruise to the forehead that's at  
6           least 24 hours old before the child died. How much  
7           more, I'm not exactly sure, but --

8   Q   At least how much?

9   A   At least 24 hours.

10   Q   Okay..

11   A   It may be more than 24 hours. It's at least 24 hours  
12           because of the presence of polymorphonucleocytes.

13   Q   Which are?

14   A   PMNs. They are a type of white blood cell. Those are  
15           the ones that are brought first to an injured or  
16           infected area in the body. Basically, they are the  
17           white blood cell marines. They arrive -- they are  
18           called to the injured tissue by chemical mediators.  
19           They come from stores of different sites away from the  
20           injured area in the body via the bloodstream. They  
21           pass through the blood vessels surrounding the injured  
22           area and enter into the tissues. Obviously, it takes  
23           some time for that process to occur. And it's clear  
24           that within 24 hours of an event such as this  
25           resulting in injury, that these cells,

1 polymorphonucleocytes, will be present within the  
2 tissues.

3 If the event is older, then there will be other  
4 forms of white blood cells that will be also present  
5 in the tissues. That can indicate a longer presence  
6 of the injury in the scalp bruise. The level, the  
7 quality of the tissue slides that I saw will not allow  
8 me to actually see well enough to see the different  
9 other types of white blood cells that could be  
10 present. So the slides that I saw about the scalp  
11 bruise did allow me to see the polys, because they  
12 have a very distinct appearance microscopically. But  
13 because of the lack of tissue clarity, I can't tell  
14 you there were not other types of white blood cells  
15 present in much lesser numbers. I don't know.

16 Q But that was enough to allow you to conclude that this  
17 had to be at least 24 hours old?

18 A Yes, 24 hours or more.

19 Q Now, Doctor, I'm confused about one thing.

20 A I'm sorry if I confused you.

21 Q No, no, no. When you signed your affidavit in May of  
22 2006 -- I don't know if you have your affidavit in  
23 front of you.

24 THE COURT: Do you have it handy? Are you  
25 looking at paragraph 10?

1 MR. FINDLEY: No, I'm looking at paragraph 4.

2 THE COURT: Okay. Here you go, sir.

3 DR. NICHOLS: Thank you.

4 BY MR. FINDLEY:

5 Q In paragraph 4, if you look at the last sentence that  
6 says in 19 -- well, you say in paragraph 4, "In my  
7 former position, I testified in many cases of alleged  
8 Shaken Baby Syndrome. I believe that the typical  
9 triad of symptoms -- brain hemorrhage, retinal  
10 hemorrhage and brain swelling -- that Natalie  
11 exhibited led me to an automatic conclusion of Shaken  
12 Baby Syndrome. In 1996 when I was still the medical  
13 examiner, I would have testified in much the same way  
14 as the doctors had testified against Audrey Edmunds."

15 A Without the history provided by the first provider,  
16 the first health care provider who was there,  
17 actually, the police officer, of a choking event, I  
18 would not have concluded anything other than Shaken  
19 Baby Syndrome.

20 Q Okay.

21 A With -- just on the basis of the physical evidence and  
22 the child. The only way that there is any evidence of  
23 that event is historic alone. It is not on the basis  
24 of physical injuries that are seen or detectable  
25 things that are seen at the time of autopsy. There's

1           a pneumonitis present in the lung. Just the presence  
2           of the pneumonitis does not tell you for sure that it  
3           is inhaled formula. There's no observable formula by  
4           any health care provider after the EMS got there. So  
5           without that history, I would have testified this was  
6           Shaken Baby Syndrome. But given the history rather  
7           than just the physical findings, I can come to a  
8           different conclusion.

9           Q   And if you look at paragraph 10, in paragraph 10 you  
10           wrote, "Therefore, I believe that Natalie Beard was  
11           not shaken, that in 1996 at the time of the Edmunds  
12           trial, I would have immediately diagnosed Shaken Baby  
13           Syndrome in this case. It has only been recently that  
14           I've come to doubt the existence of Shaken Baby  
15           Syndrome without a neck injury."

16           A   That's all true, and the reason why I would have come  
17           to the conclusion that this was a Shaken Baby Syndrome  
18           on what the autopsy showed me is because the triad is  
19           there, and it's because in 1996, I believed that  
20           Shaken Baby Syndrome indeed could cause a head injury.  
21           I do not believe that that's true now, unless there is  
22           a cervical spinal injury.

23           Q   And so if you were presented with just the autopsy  
24           today, you would not conclude Shaken Baby Syndrome?

25           A   Correct. The autopsy alone I would not conclude

## 1 Shaken Baby Syndrome today.

2 Q And that is based on developments in the medical  
3 research of which you've been aware since 1996, is  
4 that correct?

5 A Changes reflected in the medical literature that I  
6 believe are valid, yes.

7 Q Since 1996?

8 A Yes.

9 Q Thank you.

10 Let me just go through -- so, presented with what  
11 you have today, the medical information you have today  
12 and the autopsy report and everything else that's been  
13 presented to you from the medical records, I know  
14 you've just talked about this, but I want to go  
15 through it in a little more detail. Your diagnosis  
16 today is -- can you state it again?

17 A Aspiration of formula causing a choking event  
18 resulting in asphyxia, resulting in hypoxic ischemic  
19 injury to the brain.

20 Q And is part of the reason you would diagnose that and  
21 not Shaken Baby Syndrome today is because the research  
22 since 1996 has made it clear that the kind -- the  
23 triad of injuries that we see in the brain can be  
24 caused by asphyxia or any number of other causes aside  
25 from shaking or impact?

1 A Yes.

2 Q And that's also based on more recent literature?

3 A Yes.

4 Q Now, let's talk about this choking. How is it that  
5 the choking would lead to the kind of hemorrhaging  
6 that we see in the brain?

7 A Well, choking may be responsible for two things.  
8 Number one, production of laryngospasm in which the  
9 trap door, the epiglottis of the upper portion of the  
10 larynx will slam closed and will prevent the movement  
11 of anything past it. It would be a physical  
12 mechanical obstruction to the airway. If this is  
13 trapped long enough, then there will be no exchange of  
14 gases because the upper airway is no longer  
15 functional.

16 Q Okay. So that stops the exchange of air?

17 A Yes.

18 Q How does that lead to subdural hematomas?

19 A Oh. Well, there's also a report that the types -- at  
20 least it's a computer-generated report, 2006, in which  
21 the modeling shows that the amount of pressures that  
22 are produced internally as a result of a choking event  
23 approach to and in some cases are at the theoretical  
24 level of pressures that will cause rupture of  
25 capillaries, resulting in hemorrhages wherever the

1 pressure is exerted. So this would be intracranial  
2 and within the eye.

3 Q So that accounts -- so the choking can create pressure  
4 . that would explain both the subdural hematomas and the  
5 retinal hemorrhages?

6 A Yes. Again, theoretical paper, based on computer  
7 modeling alone. We're very limited in what we can do  
8 with actual experiments here. We obviously can't use  
9 infants. It would be obviously a human rights  
10 violation. So we're reduced to mechanical models,  
11 some animal models and computer models.

12 Q And does the choking, the asphyxiation, does that also  
13 account for the brain swelling?

14 A Yes, hypoxic injury to the brain will make the cells  
15 swell, so brain swelling will occur.

16 Q So choking alone can account for all of the brain  
17 signs that you -- brain and retinal signs that you see  
18 in this case?

19 A According to -- well, not all of the brain signs that  
20 we see. There's -- according to the pathologist who  
21 performed the postmortem examination, there is a  
22 chronic subdural hematoma which preexists the acute  
23 hemorrhage within the brain both in the subarachnoid  
24 and subdural space.

25 Q And a chronic subdural hematoma is what?

1 A The leakage of blood into the subdural space. In this  
2 space, the blood will become organized, and it can  
3 form what's called a neomembrane. I have not seen a  
4 slide that shows me this particular subdural  
5 hemorrhage, so I can't tell you what it actually looks  
6 like. It's described as being old by the pathologist  
7 who performed the first examination. Apparently in  
8 consultation with a neuropathologist, he determined it  
9 was weeks, not months.

10 Q So basically, chronic subdural hematoma is a  
11 reflection of a prior brain injury in the brain?

12 A Surrounding the brain, yes, within the head.

13 Q In the head. And what kind of implications can that  
14 have in a case like this?

15 A Well, we aren't sure of the cause of the chronic  
16 subdural hematoma first. Could this be as a result of  
17 a birth injury? Could be. Could this represent a  
18 rupture of blood vessels due to injury to the head  
19 from mechanical forces other than the birth canal and  
20 after birth? It certainly may. It may represent  
21 spontaneous hemorrhage for a coagulopathic cause.

22 Q So you're saying that this hemorrhage, this old  
23 hemorrhage could simply be something that emerged  
24 spontaneously?

25 A It may be spontaneous. It may be associated with

1           birth. It may be associated with injury or unknown  
2           cause.

3       Q    And then once present in the brain, might it re-bleed?  
4       A    Subdural hematomas have the propensity for  
5           re-bleeding, yes. It may well re-bleed and expand.

6       Q    And could that account for the new subdural hematomas  
7           that were detected in the CT scan and autopsy?

8       A    Yes.

9       Q    And what's the mechanism for the re-bleed? What  
10           causes that?

11      A    Breakdown of the clot, granulation tissue formation,  
12           which is neovascular, which can cause leakage from the  
13           newly-formed blood vessels.

14      Q    And what can cause that to happen, though? I mean,  
15           can -- does it require new impact? Can it be choking,  
16           anything that elevates pressure, such as coughing,  
17           gagging, vomiting? What are the possibilities?

18      A    All of those things and unknown causes.

19      Q    And can a re-bleed be spontaneous?

20      A    Yes.

21      Q    And what about retinal folds?

22      A    I'm not an expert on ophthalmologic pathology at all.

23      Q    Okay.

24      A    And I have not seen the slides prepared from the eye  
25           tissues in this case, nor have I to this day been

1 furnished a copy of the report concerning the  
2 appearance of the eyes to the ophthalmologist in the  
3 postmortem state.

4 Q What is the significance of the fact that the first  
5 responders and the 911 call reflect that the child was  
6 gasping?

7 A Well, it's clear that someone recognized that the  
8 child was not breathing normally and in fact alerted  
9 authorities because of the abnormal breathing that was  
10 seen and heard.

11 Q And there was not a large amount of fluid, of formula  
12 taken from the child. Is that -- does that concern  
13 you in terms of your diagnosis that this was a choking  
14 episode?

15 A Well, it doesn't have to be a huge amount, as long as  
16 it is in the right place and produces spasm of the  
17 larynx.

18 Q And was this formula in the right place?

19 A It's clear that there was cessation -- that there was  
20 abnormal breathing with cessation of breathing  
21 activities after it had been there, so --

22 Q "Been there" meaning?

23 A In the back of the throat.

24 Q And is that a place where formula could cause the  
25 spasm, I think it's called -- you referred to it as a

1                   laryngospasm?

2       A   Yes, if it's in the back of the throat below the base  
3                   of the tongue on the upper surface of the larynx.

4       Q   So that small amount of spasm could cause a  
5                   laryngospasm which closes off the airway?

6       A   Yes, similar to us when we swallow something and it  
7                   goes down the wrong way.

8       Q   Okay. Now, Dr. Perloff at the original trial ruled  
9                   out choking because he said there was no identified  
10                  material in her airway at the time that she was  
11                  intubated.

12      A   Yes.

13      Q   What is your response to that?

14      A   That the airway had been cleared above the larynx and  
15                  that whatever, if it's a liquid -- and this is --  
16                  whatever is present in the larynx or trachea will be  
17                  pushed downstream as a result of mechanical  
18                  ventilation with the bag mask system.

19      Q   You say that the airway was cleared. How do you know  
20                  that? I mean, what are you referring to? What do you  
21                  mean by that?

22      A   Because the statement of the police officer is that he  
23                  cleared the airway.

24      Q   Okay. The airway, the fluid that was in the upper  
25                  airway was removed?

1 A Yes.

2 Q And then any -- and the fact that there was no -- at  
3 the time that she was intubated, there was nothing  
4 below that is explained, I'm sorry; again how?

5 A If there was something there, and it's liquid, it will  
6 be pushed by the force of the gases, air, if you would  
7 like, coming out of the Ambu bag and mask applied to  
8 the face of the infant to allow gases to be exchanged.

9 Q And where will it be pushed to?

10 A Into the lungs.

11 Q And will that be a place that it could be detected?

12 A By what?

13 Q Can you tell me that? How could it be detected?

14 A It can't be detected by examining with a laryngoscope  
15 because the laryngoscope will not allow you to view  
16 down where you need to see. It would have to be done  
17 with a bronchoscope if you're going to try and  
18 actually see it.

19 Q And is there any indication that that was done here?

20 A No.

21 Q How else might you detect fluid like that in the  
22 lungs? Is that something the x-ray would reveal?

23 A It's clear that an x-ray would show abnormalities  
24 associated with the presence of the fluid and its  
25 reaction in the tissue.

1 Q And did the x-ray in this case show that?

2 A The chest x-ray shows bilateral infiltrates, yes.

3 Q And bilateral infiltrates means -- means what?

4 A Means that the air spaces have stuff in them.

5 Q Okay. So that's consistent with your diagnosis then?

6 A Yes.

7 Q Dr. Perloff also said he ruled out choking because the  
8 sequence that Natalie Beard went through was in his  
9 judgment not consistent with choking, that is to say,  
10 he opined that because her eyes were fixed and dilated  
11 when the first responders arrived, and yet she was  
12 gasping at that time, that meant that she could not  
13 have choked because the eyes would not be fixed and  
14 dilated until the final stages of the choking episode.

15 A Yes.

16 Q What -- is that -- what's your reaction to that?

17 A I don't know. That's a question that should be  
18 addressed by someone who takes care of living people  
19 rather than me, who takes care of dead people. I  
20 don't know.

21 Q Is it possible for her to be gasping for breath as a  
22 result -- after her eyes had been fixed and dilated  
23 and yet have the choking still be the cause of that  
24 death?

25 A Yes, it shows that there's persistent activity at the

1           level of the brain stem which is associated with  
2           respiratory efforts, yes.

3           Q    So the brain stem is what controls respiration?

4           A    Yes.

5           Q    And what controls whether the eyes are fixed and  
6           dilated?

7           A    It's swelling of the brain with compression on a  
8           cranial nerve.

9           Q    And so that's a different part of the brain?

10          A    Yes.

11          Q    Would -- in a choking episode, would the brain send  
12           signals to the body to do things to protect itself,  
13           that is, to remove the choking impediment, whatever it  
14           might be?

15          A    It's clear that if the brain is receiving the  
16           information from the nervous system that it should  
17           respond and attempt to cough the material out.

18          Q    And are there indications in this record that that was  
19           happening?

20          A    I find no indication in the record that the child was  
21           coughing. Rather, the child was making strange  
22           noises, whether that's a cough or not, struggling to  
23           breathe and then became apneic. So something was  
24           going on that's other than normal breathing.

25          Q    And is that an indication that the brain is trying to

1 do something to regain the ability to breathe?

2 A It may well be, yes.

3 Q In a choking episode, would you expect to see  
4 petechia?

5 A No, I expect to see petechia -- first of all,  
6 petechialization, bleeding from capillaries, is a  
7 nonspecific finding generally.

8 Secondly, the most frequent time that one will see  
9 a petechial hemorrhage deals with increased pressure  
10 within the vascular system, resulting in increased  
11 venous pressure, resulting in capillary rupture. So  
12 that's when I would expect to see it.

13 Q And -- okay. In theory, can trauma impact -- trauma  
14 cause the kind of brain swelling, retinal hemorrhages,  
15 subdural hematomas, etc. that were observed in this  
16 case?

17 A Yes.

18 Q Could therefore impact be the cause?

19 A Yes.

20 Q So you don't rule that out?

21 A I do not, especially in light of the fact that there  
22 is an injury detected on the head which may well have  
23 been a cause.

24 Q So then why did you say that you believe that this was  
25 an instance of choking?

1 A Well, I think the terminal event is choking. The  
2 question is whether that choking event is primary all  
3 by itself or whether it's secondary to abnormal brain  
4 function, as in the child was able to feed without  
5 choking before, but suddenly was unable to feed  
6 without choking.

7 We know that there's an abnormality in the tissues  
8 intracranially, that there's a subdural hematoma which  
9 is present which may well produce minor degrees of  
10 brain swelling, resulting in the child's inability to  
11 feed safely.

12 Q So if I understand you correctly, what you're saying  
13 is that this could be choking which precipitated the  
14 whole process?

15 A A primary event, yes.

16 Q Or it could be preexisting brain injury which  
17 interfered with the child's ability to breathe caused  
18 the choking which entered a cycle.

19 A Correct. And the third option is that there may be an  
20 impact resulting in brain swelling which progresses to  
21 the point where there's choking.

22 Q Okay. And you can't say definitively which of those  
23 scenarios occurred here?

24 A No, I cannot.

25 Q Let's go with the impact possibility for a while. The

1 signs of impact that you see here, I think you've  
2 testified that there was a bruise to the head?

3 A There are actually three bruises to the forehead, only  
4 one of which would be contemporaneous, near the time  
5 of the child's illness.

6 Q But that was at least 24 hours old?

7 A That's correct.

8 Q So this is not an impact-induced injury that occurred  
9 within several hours of being seen by medical  
10 personnel?

11 A No, but the timing I'm giving you is from the time of  
12 death.

13 Q Okay, okay. So it would not be something that  
14 occurred within four or five hours of the time of  
15 death?

16 A No, it would be something that occurred 24 hours or  
17 greater from the time of death.

18 Q So I take it from what you're telling me then that in  
19 cases like this where you have subdural hematomas,  
20 retinal hemorrhages, brain swelling that lead to death  
21 that there can be what's referred to as a lucid  
22 interval?

23 A Yes, that's one of the many things that my review of  
24 the literature has told me is that -- is that the  
25 lucid interval can and does occur after brain impact

1           injuries resulting in cerebral edema that will be  
2           ultimately fatal.

3       Q    And your review of the research, is this again  
4           something that's based in large part on research  
5           developed over the last ten years or so?

6       A    Yes. The prior thought, and what I was taught and  
7           what I accepted, was that there would be a shake, that  
8           there would be immediate loss of consciousness without  
9           any lucid interval. That I believe is false.

10      Q    Dr. Perloff in fact at this trial in this case  
11           testified that immediately after impact or shaking,  
12           Natalie would have been unconscious, unresponsive and  
13           limp. Was that the standard that -- the accepted  
14           wisdom at the time of this trial in 1996?

15      A    Yes, we were taught that this always happened.

16      Q    That it always happens immediately?

17      A    Yes.

18      Q    And what you're saying now is that that's not true,  
19           and that's not true based on research developed since  
20           then?

21      A    Yes.

22      Q    Do you know how long the lucid interval can last?

23      A    No.

24      Q    Is there an outer limit?

25      A    I'm unaware of any outer limit. Progressive cerebral

1 edema can occur extremely quickly after head injury.

2 It may have a slower, more insidious onset. Exactly  
3 how many hours I do not know.

4 Q Have you observed cases in which there was a -- in  
5 your practice in which there was a lucid interval?

6 A Yes.

7 Q Can you describe what you're talking about?

8 A A child who's sustained a head impact and who was  
9 conscious and walking for at least three minutes, who  
10 then collapsed and died and has the findings of an  
11 injury to the scalp, subarachnoid, subdural  
12 hemorrhages, marked cerebral edema and death.

13 Q In your role as a forensic pathologist, is there a  
14 difference between -- in terms of what you can -- what  
15 you can decide in terms of cause of death versus  
16 manner of death?

17 A Well, they're two different topics.

18 Q Can you describe what are the two different topics.

19 A The cause of death is that event that results in a  
20 chain of events that results in the death of a person,  
21 so it is the disease or disorder or physiologic  
22 disruption that causes your death.

23 The manner of death is a statistical process done  
24 by -- on the death certificate in which you have five  
25 choices -- homicide, suicide, accident, natural or not

1                   determined.

2           Q    Can you have any degree of certainty, given the  
3                   medical records in this case, as to either of those  
4                   matters in this case?

5           A    I clearly would consider this to be an undetermined  
6                   manner of death.

7           Q    But a determined cause of death?

8           A    Determined cause of death, undetermined manner of  
9                   death.

10          Q    And a determined cause of death again would be?

11          A    A choking event resulting in asphyxia.

12          Q    And when you say you can't determine the manner, you  
13                   can't determine what choked her or whether there was  
14                   any intent involved or anything like that. Is that  
15                   what you're referring to?

16          A    No. I know what choked her. It's a matter of whether  
17                   there was intent by anybody or whether anybody did  
18                   anything. It may have been spontaneous.

19          Q    Okay. Let me just summarize, if I can, really  
20                   quickly.

21                   If I understand you correctly, given the injuries  
22                   and science presented here, the dominant view in the  
23                   medical community in 1996 about what caused the death  
24                   would be Shaken Baby Syndrome, is that correct?

25          A    Given the findings at physical examination and

1                   autopsy, yes.

2       Q   And that would have been a view that was almost  
3                   universally accepted among forensic pathologists at  
4                   that time?

5       A   Yes.

6       Q   Including you?

7       A   Yes.

8       Q   And was that supported by most of the professional  
9                   literature at the time?

10      A   It was supported by the literature at the time, yes.  
11                   There were a few biomechanical papers that were out  
12                   there that at least I hadn't read.

13      Q   Okay. And are there still doctors today who adhere to  
14                   that orthodox?

15      A   Yes.

16      Q   Is this a subject of serious and legitimate debate in  
17                   the medical community today, especially in a manner  
18                   that it was not in 1996?

19      A   It is fiercely debated.

20      Q   And was it fiercely debated in the medical community  
21                   in 1996?

22      A   By the vast majority of practitioners involved in  
23                   these issues, no.

24      Q   So that has changed?

25      A   Yes.

1 Q In its brief in response to the motion in this case,  
2 the state wrote, "The mainstream of experts in the  
3 U.S. still strongly support the type of conclusions  
4 presented in our 1996 trial. There's been a fringe of  
5 doctors, mainly paid defense experts, who disagree."

6 Is that an accurate assessment?

7 A In my opinion, no.

8 Q Is it true that only a few outliers reject the older  
9 perspective?

10 A In my opinion, no.

11 Q Since the late 1990s, does the emerging  
12 scientifically-based research literature support that  
13 older established view of Shaken Baby Syndrome and  
14 Shaken Infant Syndrome, or does it challenge the  
15 assumptions underlying it?

16 A It challenges the assumptions and the mechanics of  
17 that theory.

18 Q And this is all largely new since Audrey Edmunds'  
19 trial?

20 A Yes.

21 Q Thank you. Nothing further.

22 THE COURT: Thank you. Ms. Rusch, you're doing  
23 cross?

24 MS. RUSCH: Yes.

25 THE COURT: Do you have an estimate of how long

1 it'll be? I'm trying to figure out if we should take  
2 a break or not.

3 MS. RUSCH: I'm saying at least 45 minutes,  
4 Judge.

5 THE COURT: Why don't we take a break, let the  
6 witness have a break and everyone else have a break.  
7 Let's start again in ten minutes.

8 (Recess)

9 . . . . . THE COURT: Okay. Ms. Rusch.

10 MS. RUSCH: Thank you, Judge.

11 CROSS EXAMINATION BY MS. RUSCH:

12 Q Dr. Nichols, my name is Shelly Rusch. I want to go  
13 over your testimony, because at least I was confused  
14 regarding what you would have diagnosed in 1996 based  
15 on what you have or have reviewed in this case. And  
16 what I understood clearly from your testimony is that  
17 you had all of the medicals in your possession before  
18 you signed your affidavit in this case. Am I correct  
19 in that recollection?

20 A That is correct.

21 Q And the medicals would have included findings, or did  
22 you not see any finding?

23 A I do not have the report of the slides.

24 Q Okay. Report of the slides.

25. I'd like to have this marked.

1 (Exhibit 13 marked for identification.)

2 Q Sir, I'm handing you what's been marked Exhibit 13,  
3 and it's a two-page document, and I direct your  
4 attention to the second page.

5 A Yes.

6 Q Was that particular document by the pediatric  
7 ophthalmologist included in the medical records you  
8 reviewed before signing your affidavit in this case?

9 A This report, no. There were reports in the medical  
10 record of the ophthalmology consultation. I have not  
11 seen this report, as far as I know.

12 Q Okay. So whether it was included or not, it's clear  
13 today that this is the first time you're seeing that  
14 report.

15 Just in fairness, based on my next series of  
16 questions, I would just ask you to review that to  
17 yourself.

18 A Yes.

19 Q Doctor, there were retinal folds, retinoschisis  
20 diagnosed or observed, I should say, in this  
21 particular case, the Natalie Beard death. Would this  
22 have changed your initial opinion that after reading  
23 Chief Robertson's (sic) report, and then you would  
24 have diagnosed death caused by this obstructed airway  
25 hypoxia method?

1 A This finding, to me, shows that there has been an  
2 injury in the brain that's resulted in problems  
3 secondarily in the eye. I believe, at least from what  
4 I have read, and I've read extensively here -- and  
5 this is basically a purview of the ophthalmologist  
6 rather than the pathologist -- that there's  
7 controversy between certain people in the ophthalmology  
8 literature as to the meaning and significance of  
9 retinal findings period as a generality. So asking me  
10 about the presence of retinoschisis here is the wrong  
11 person.

12 Q Well, you're a pathologist.

13 A Yes.

14 Q And you engage in cause of death opining, is that  
15 correct, in your profession?

16 A I did not kill this person.

17 Q It's a symptom, isn't it, Doctor?

18 A No, it's a finding.

19 Q It's a finding then. Thank you for that correction.  
20 It's a finding in this case, isn't it?

21 A It is a finding, yes.

22 Q Are you aware of any study or any case where retinal  
23 folds are found in the absence of traumatic brain  
24 injury?

25 A I believe that there's an ongoing study at Wake

1 Forest.

2 Q So it's not done, but it's ongoing?

3 A It is ongoing, and it is by Pat Lance, and I'm waiting  
4 to see the results.

5 Q Speaking of Dr. Lance, Dr. Lance, are you familiar,  
6 documented one case study where a 14-month-old had the  
7 misfortune of having a 44-pound television basically  
8 fall onto his head. Are you familiar with that single  
9 case study of Dr. Lance?

10 A Yes, I'm aware of that case report.

11 Q And that case did result in a finding of retinal  
12 folds. I mean, are you familiar with that?

13 A Yes.

14 Q His finding? Other than that particular case, a 44 --  
15 42-pound television falling on a child's head along  
16 with the furniture it was on, are you aware of any  
17 other case in your pathological career where retinal  
18 folds have been found in the absence of traumatic  
19 injury?

20 A I am not. The eye did not kill this child.

21 Q Speaking of findings, it's important or it's necessary  
22 to look at all findings before arriving at either a  
23 diagnosis or a cause of death in any case, correct?

24 A Yes.

25 Q And what is your understanding of the autopsy report

1                   in terms of cause of death in this case?

2     A    Head injury, blunt force, see comment.

3     Q    Well, what does the comment say, since it directs you  
4                   to a comment?

5     A    Well, it also lists cerebral edema, subdural  
6                   hemorrhage, scattered subarachnoid hemorrhages and  
7                   scalp hemorrhages appearing to vary in age. The  
8                   comment is, "She died with signs of brain injury.  
9                   Further, there are signs of older injury in scalp and  
10                   dura. Consultation with out-of-state colleagues  
11                   confirm that we have a fatal injury with shaking as at  
12                   least a major component. Given the prior injury, this  
13                   must appear prima facie as an abuse death."

14    Q    And you disagree with that comment, is that correct?

15    A    Yes.

16    Q    You hesitated. Why?

17    A    I had to reread it.

18    Q    Do you agree with the observation that Natalie Beard  
19                   died of brain injury?

20    A    No, but the question is whether the brain injury is as  
21                   a result of a blunt force event, i.e., the forehead  
22                   contusion. It is as the result of a secondary injury  
23                   due to hypoxia.

24    Q    Okay. I want to go back to how you would have  
25                   diagnosed this case in '96. You indicated you would

1 not have diagnosed SBS in 1996.

2 A Only because I would have had -- if I had the history  
3 of having an obstruction due to choking. What I  
4 attempted to tell you was that the findings seen in  
5 the autopsy report would have drawn me to the  
6 conclusion of SBS.

7 Q But what you were lacking was Waunakee Police Chief  
8 Roberts' report, and that changed your mind, or in  
9 other words, you testified that that caused you to  
10 feel more certain that this was a choking death.

11 A Yes.

12 Q And that's based on simply what Chief Roberts reports,  
13 is that correct?

14 A Yes.

15 Q And just to go over that, Chief Roberts reports that,  
16 "On October 16, 1995, at 8:41, I entered the house. I  
17 observed a fully-clothed infant lying on the living  
18 room floor. The infant was positioned near the  
19 basement stair steps. I observed a female, later  
20 identified as Audrey Edmunds" -- I'm going to skip  
21 forward to the last paragraph on that page.

22 "I bent over the infant and began to assess the  
23 infant's condition. I observed formula coming out of  
24 the corner of the infant's mouth and through the  
25 infant's nose." Let me stop there.

1                   Is it your testimony here today that a completely  
2                   obstructed airway, the type of obstructed airway that  
3                   would result in brain hemorrhage, that would result in  
4                   hypoxia, that a completely obstructed airway could  
5                   account for liquid or formula coming out of the mouth  
6                   and the nose?

7           A    No. My testimony is that there was evidence of  
8                   formula coming out of the mouth and coming out of the  
9                   nose. Also my testimony was that there is -- there  
10                  was abnormal breathing that was reported with sudden  
11                  cessation of breathing, and I've never said there was  
12                  completely mechanical obstruction to the -- to the  
13                  upper airway, with the exception of laryngospasm.

14           Q    With the exception of what?

15           A    Laryngospasm.

16           Q    If there wasn't complete obstruction of the airway so  
17                  that air was getting into the lungs, air, oxygen,  
18                  presumably then would be getting to the brain?

19           A    No. The mechanical obstruction is at the top of the  
20                  larynx, the epiglottis, so there is a functional  
21                  mechanical obstruction rather than necessarily the  
22                  back of the throat totally filled with formula.

23           Q    Reading on in Chief Roberts' report, "The infant was  
24                  breathing with long, shallow gasps. I turned the  
25                  infant to her side and the infant began to spit

1 formula onto the floor." So there's some -- some type  
2 of upping or clearly air exchange issue going on?

3 A There's movement of stuff, yes.

4 Q There's movement of stuff; there's movement of air,  
5 isn't there?

6 A There should be air moving also, yes.

7 Q Okay. And that comment in Chief Roberts' report is  
8 consistent with both of those statements?

9 A Yes.

10 Q "I applied two back blows to the infant's upper back  
11 and the infant made a gasping sound -- gasping sound  
12 and spit more formula onto the floor. The infant then  
13 began to take erratic, shallow breaths."

14 So assuming Chief Roberts knows what he's talking  
15 about, Natalie Beard was breathing at that time at  
16 8:41 a.m. on October 16, 1995?

17 A Not breathing normally, yes.

18 Q But an exchange of air.

19 A Moving stuff. I don't know whether it's getting all  
20 the way down or not.

21 Q Okay. Chief Roberts goes on to report -- counsel, top  
22 of page 2 of his four-page report -- "I laid the  
23 infant on the infant's side and attempted to locate a  
24 brachial pulse. I was able to locate a slight pulse  
25 that was very weak." So there's blood flow in the

1                   body at this point?

2       A    Yes.

3       Q    "I opened the infant's mouth and was unable to observe  
4                   any airway obstruction. I observed that the infant's  
5                   eyes were fixed and dilated."

6       A    Yes.

7       Q    Okay. What I really need you to explain to me is what  
8                   fixed and dilated means in terms of brain status.

9       A    It means there's no longer function of the sixth  
10                   cranial nerve bilateral.

11      Q    Brain is pretty seriously injured at that point; is  
12                   that fair to say?

13      A    Yes.

14      Q    Okay. And at that same moment, we have shallow  
15                   breaths, we have a weak brachial pulse, we have some  
16                   gasping going on.

17      A    Yes.

18      Q    Okay. And your testimony remains that in spite of the  
19                   fixed, dilated pupils and the breathing and the  
20                   exchange and the spit-up that this was still a choking  
21                   that resulted in asphyxia?

22      A    I believe, but if you also listened to my testimony, I  
23                   told you I did not -- could not tell whether the  
24                   asphyxiation was a primary or secondary event, that  
25                   this may well be as the result of existing brain

1           abnormality in a child who was fed and then cannot  
2           handle the feeding properly. I still don't know.

3       Q    Well, would it help you to know that the child was  
4           handling feeding properly about an hour and an hour  
5           and a half before this?

6       A    Yes, but there --- obviously, things can change in an  
7           hour and a half.

8       Q    Doctor, Natalie was described at the scene, in fact,  
9           by Audrey Edmunds in the 911 call as warm to the  
10           touch, normal temperature, the child was fully  
11           clothed. If this death were caused by asphyxia  
12           secondary to choking, with fixed, dilated pupils, how  
13           long does it take for the body to die without a breath  
14           of air? Or the brain, I should say, the brain to die.

15      A    Well, the only data we have on that comes from the  
16           American Red Cross, which will tell you that five  
17           minutes without perfusion and oxygen will produce  
18           irreversible brain damage.

19      Q    And again, your testimony in this case is that that  
20           type of time frame occurred in Natalie's case, thus  
21           causing her death?

22      A    I believe that she has ischemic hypoxic injury to the  
23           brain that causes brain swelling, yes. She also may  
24           have had existing brain swelling that I cannot rule  
25           out.

1 Q Or she also may have been abused?

2 A She may have. She may have been struck in the  
3 forehead.

4 Q So Doctor, now, you've indicated -- and I trust you  
5 don't have any reason to disagree with that particular  
6 finding -- that that interval between absolute lack of  
7 oxygen and brain death is somewhere four to five  
8 minutes, let's say. Knowing that, how long would it  
9 take for the infant in this case, this infant's core  
10 temperature to drop five, six degrees?

11 A I have no data to be able to tell you that, so the  
12 answer is I don't know.

13 Q So it wouldn't assist you or provide you with any  
14 useful information on the opinions you're rendering  
15 here today to know that three minutes after Natalie  
16 was breathing, her core temperature had dropped to --  
17 from a warm child to 91.7?

18 A I don't know the significance of what you've just  
19 asked me.

20 Q You were fairly thorough, I think, in summarizing what  
21 you had reviewed, etc., but what I want to focus now  
22 on is your affidavit in this matter.

23 THE COURT: Do you need it?

24 DR. NICHOLS: Thank you. I have one someplace.

25 Yes, ma'am?

1 BY MS. RUSCH:

2 Q Thank you. Specifically to paragraph 2 indicating  
3 that you had been informed that in this trial, the  
4 death was attributed -- or the experts concluded that  
5 Natalie died as a result of Shaken Baby based on the  
6 presence of, one, retinal hemorrhages; two, a subdural  
7 hemorrhage; three, a subarachnoid hemorrhage and  
8 presented signs and symptoms. What did you understand  
9 those presenting signs and symptoms to be?

10 A Profound neurologic impairment and brain death.

11 Q And do you, having learned what you have, presumably  
12 somewhat more about this case today, have any reason  
13 to believe that perhaps the findings in terms of the  
14 testimony at trial were based on anything more than  
15 presenting signs and symptoms and of the triad, as we  
16 call it?

17 A Not having read the testimony, I don't know how I can  
18 answer that question.

19 Q Well, you said right here you were informed that this  
20 is what they testified to. Who informed you?

21 A Counsel.

22 Q Okay. And then before you wrote the affidavit, you  
23 read all the medicals, or at least the medicals that  
24 were sent to you?

25 A Yes.

1 Q Including the autopsy?

2 A Yes.

3 Q Okay. Would it change your opinion here today if in  
4 fact what the medical experts testified to is that  
5 there were at least seven findings upon which they  
6 based their determination of abusive inflicted injury?

7 A And they are?

8 Q One, brain injury; a cold core temperature; subdural  
9 hematomas; retinal hemorrhages and retinal folds;  
10 minimal or no external sign of injury; the absence of  
11 any plausible high energy cause of injury; the absence  
12 of any other medical diagnosis; and last, but not  
13 least, impact injury, a scalp contusion in the form of  
14 a subgaleal hemorrhage.

15 A All right. I've heard what they said.

16 Q So, it's -- we're going to move beyond this triad  
17 because I'm going to ask you to accept as true that  
18 this is what the experts based their opinions on.

19 If there was a basis for these findings, then  
20 would you change your opinion about it's more likely  
21 that Natalie choked than was the victim of an abusive  
22 inflicted head trauma?

23 A On what basis is the abusive inflicted head trauma?  
24 On the basis of a shake? I absolutely believe that  
25 that's invalid.

1 Q What about evidence of impact here?

2 A There is evidence of impact, and in fact, I've talked  
3 about that on direct-examination that there is a  
4 one-half-by-three-eighths-inch contusion present in  
5 the frontal forehead, which I've examined with a  
6 microscope as best as I can, given the condition of  
7 the slides, to tell you as best I can that that injury  
8 is at least 24 hours before her death.

9 Q I got that. Go to page 2, paragraph 8 of your  
10 affidavit. You indicate here after, again, your  
11 opinion that she is choked, not shaken, the second  
12 sentence here, "Impact injuries of face and head did  
13 not exist."

14 A That's incorrect. There's an impact injury to the  
15 face.

16 Q Were you aware -- and I'm not talking about the  
17 forehead bump older than 24 hours. Were you aware  
18 that there was a subgaleal hemorrhage not on the  
19 forehead?

20 A Anti-occipant?

21 Q I can't clarify that for you in that specific regard,  
22 but there was a finding of a subgaleal hemorrhage.

23 MR. FINDLEY: Your Honor, could I ask that  
24 counsel direct us to where that's coming from?

25 MS. RUSCH: Just a moment.

1 DR. NICHOLS: I believe I've located it for you.

2 BY MS. RUSCH:

3 Q What have you found?

4 A Page 3 of the autopsy report under "Internal evidence  
5 of injury," line 4, "over the posterior fontanelles,"  
6 back here --

7 Q Right.

8 A -- "region, a one-by-seven-eighths-inch area of brown  
9 discoloration appears to be old hemorrhage in the  
10 galea," here.

11 Q Okay. Did you consider that finding at all in coming  
12 here to testify today that you believe this is choking  
13 and not shaking, or I don't -- let's not use the word  
14 "shaking." Abusive head trauma.

15 A That's an old injury.

16 Q Okay.

17 A That's not contemporaneous with this event at all, and  
18 the location of it may well be associated with what's  
19 called a cephalohematoma, which is bleeding under the  
20 scalp that occurs with great frequency with vaginal  
21 deliveries, so that may be a resolved cephalohematoma  
22 that you're looking at.

23 Q Is there any evidence -- and I apologize if I've asked  
24 you this before -- but is there any evidence that  
25 choking leading to hypoxia causes retinal folds?

1 A I do not know.

2 Q Now, in your affidavit, which we've studied carefully,  
3 you saying nothing about lucid interval. When -- were  
4 you first asked about lucid interval by counsel here  
5 today for the first time?

6 A No. Counsel asked me about lucid intervals following  
7 alleged events of Shaken Baby Syndrome.

8 Q And it's just not included in the affidavit any of  
9 your observations about lucid interval?

10 A It's not in this document.

11 Q Okay. Will you tell me in infants, in terms of child  
12 development, how lucid or lucidity is assessed. For  
13 example, in an adult, you might say who's the  
14 president, who was the president four years ago. And  
15 in an infant, how do you assess lucid?

16 A I don't know. You would have to ask a caregiver who  
17 takes care of infants. I do not.

18 Q Okay.

19 A I do not assess lucidity in anybody.

20 Q Okay. But you are -- you're impressed by the lucid  
21 interval research since 1996. Is that what I heard  
22 you say?

23 A I don't know whether I said impressed. I said that I  
24 had read it. And I said that it contradicts the dogma  
25 of Shaken Baby Syndrome in place in 1996.

1 Q Can you give me an example of one such lucid interval  
2 study?

3 A They are all in case reports, and I did not bring that  
4 bibliography here. I can certainly provide it to you,  
5 but there are certainly case reports of lucid  
6 intervals in children and in adults.

7 Q Have you encountered or are you familiar with the  
8 Suzanne Starling, et al. article entitled "Analysis of  
9 Perpetrator Admissions to Inflicted Traumatic Brain  
10 Injury in Children?"

11 A Yes.

12 Q And I know you did mention to some degree how do we --  
13 how do we know how these things happened, and you  
14 talked about different biomechanics. Perpetrator  
15 interviews was one of the things you mentioned.

16 The results, or some of the results -- there were  
17 many results of that study -- were that cases were  
18 identified wherein children suffered abusive head  
19 injuries or brain injury -- traumatic brain injury, I  
20 think they called it -- and there were about 181 cases  
21 maybe that were identified, and in about half of those  
22 cases the perpetrator -- the perpetrators admitted to  
23 their actions with an infant, whatever had happened to  
24 the infant before this brain injury, and about another  
25 half there was no admission. Do you put any stock in

1       these kinds of reports in terms of learning more about  
2       a science or a medicine that we really can't ethically  
3       replicate in a lab?

4   ... A. I think that the use of confessions and use of trial  
5       outcomes or pleadings is no way to reinforce any form  
6       of scientific assessment of cause.

7   Q. That's fine. I'm not sure that there's any mention --  
8       and I did read this report several times with this  
9       article of trial outcomes, but there were clearly very  
10      brain-injured young children, and there were emergency  
11      room record reports, and then there were caretaker  
12      statements, and as I think I've tried to indicate --  
13       and you may recall from having been familiar with the  
14       article -- about half of the caretakers admitted to an  
15       abusive shaking impact event. Just generally, I mean,  
16       do you think that that's something that we should look  
17       at, all of us, in this big picture reexamination?

18   A. I think that no one should impact their child or  
19       anybody else's child, and that's the value of that  
20       study.

21   Q. What is the most common finding, Doctor, in abusive  
22       head injury cases if you had an abusive head injury in  
23       an infant and you were doing the autopsy?

24   A. Cerebral edema.

25   Q. That's brain swelling?

1 A Yes.

2 Q More or equally as common a finding as brain bleeding  
3 or subdural hemorrhaging?

4 A More common, cerebral edema. The common path of brain  
5 injury is cerebral edema, be it on the basis of an  
6 infection, a chemical intoxication, hypoxia, or  
7 intracranial hemorrhage. The brain can only do  
8 certain things after it has been insulted, and the  
9 main thing it does is swell.

10 Q Okay. Also, I was interested and focused on your --  
11 the theory which you set forth pretty clearly in your  
12 affidavit on your opinion being that Natalie Beard  
13 died from a choking event as opposed to shaking.  
14 Again, getting back to that, would you -- one moment.  
15 Refer to number 8. I'm sorry.

16 A Yes, ma'am.

17 Q And you've already corrected that impact injury did  
18 exist, and when you say these are types of injuries,  
19 you mean the cervical spine injury or an impact  
20 injury, those types of things you would expect to see  
21 if the child had been shaken?

22 A No, I did not compose that sentence, and I probably  
23 should have rewritten it, and I will gladly tell you  
24 that I believe what we have here is no evidence of a  
25 shake at all. The shake alone, without any -- without

1           an impact, if it causes anything is going to cause a  
2           cervical spinal abnormality, none of which was found.  
3           That's my belief today from examination as best I can  
4           of all the medical literature. So shake, I believe,  
5           is out.

6           There is an impact injury. We talked about it. I  
7           said I cannot assure myself that that did not have  
8           something to do with the development of this child's  
9           neurologic abnormalities.

10          Q    So, I mean, could you just change the sentence,  
11           though, so that it's right? It says, "These are the  
12           types of injuries one would expect to see if the child  
13           had been violently shaken to death."

14          A    I don't think the child was violently shaken to death  
15           at all.

16          Q    Well, what were the types of injuries you would expect  
17           to see?

18          A    I think if the child was impacted to death, we would  
19           see injury to the face and/or the scalp with  
20           hemorrhage, that there would be acute brain swelling.  
21           There may or may not be acute intracranial hemorrhage.

22          Q    Okay. And in Natalie's case, there was acute brain  
23           swelling, isn't that correct?

24          A    Yes, there is an impact injury that I have already  
25           stated that I cannot exclude.

1 Q I'm not asking you to.

2 Number 9, "The intracranial findings of retinal  
3 hemorrhages can occur as a result of asphyxia, causing  
4 brain anoxia if resuscitated." Am I to understand  
5 that Number 9 to some degree talks about the  
6 confounding factor of resuscitation attempts?

7 A Yes.

8 Q Okay.

9 A There would be -- there would be no retinal  
10 hemorrhages if the child had not been resuscitated.  
11 There would not be increased intracranial pressure  
12 that would have pumped blood through. Had the child  
13 died right there, there would have been no evidence of  
14 this.

15 Q So is it your testimony that the resuscitation caused  
16 retinal damage to the infant?

17 A No. There are reports of intraretinal hemorrhages due  
18 to resuscitation. This child has resuscitation and  
19 cerebral edema, two reasons for it to have retinal  
20 hemorrhages.

21 Q Now, ultimately when people die, at some point they  
22 stop breathing. I think that's pretty common-sense.  
23 I know I could be shot through the heart and then stop  
24 breathing, and you could make a finding of hypoxia in  
25 me, but really, what killed me was the shot through

1 the heart.

2 I'm trying to -- I understand your posturing or  
3 your presenting, I should say, an alternative theory  
4 for cause of death. But given the breathing evidence,  
5 in other words, the 911 tape at 8:41 with this infant  
6 gasping for air, breathing; also, the trial testimony  
7 according to the defendant herself that this child was  
8 making a whimpering noise very shortly, within a  
9 minute, before calling 911 and took a deep breath,  
10 combined with the evidence from Chief Roberts that the  
11 baby was breathing, spitting up, with fixed, dilated  
12 pupils, how is it again that you exclude abusive head  
13 trauma as a cause of death?

14 A In what injury is the abusive head trauma produced?  
15 The quantity of subdural hematoma by itself is not  
16 very much. The subarachnoid hemorrhage is localized  
17 to very small portions of the brain. The subdural  
18 hematoma that is chronic is not assessed in terms of  
19 its mass or volume that I'm aware of it.

20 What I'm trying to tell you is that the bleeding  
21 inside the brain certainly is not very much, the  
22 bleeding around the brain.

23 Q Well, the evidence of choking isn't really very much  
24 either, because if you're choking, you're not  
25 whimpering, wouldn't that be true? You can't make a

1 sound while your airway is completely obstructed?

2 A If it's completely obstructed, you can't, correct.

3 Q And if it's not completely obstructed, you're getting

4 some oxygen, you're getting some air, correct?

5 A Some, but not enough.

6 Q So the some, but not enough then would cause the

7 subdural hematoma?

8 A No, it would cause brain swelling.

9 Q Ah. So it wouldn't cause a subdural hematoma, but it

10 would cause fresh blood in the subarachnoid space?

11 A Leakage from a swollen brain can occur in the

12 subarachnoid space, yes.

13 Q And we just don't know about the retinal folds, so

14 we'll skip that. And does it assist you at all in

15 terms of that ultimate question I pose, I guess, that

16 there was in this case in terms of history, history by

17 the defendant herself, an absence of any other high

18 energy cause of injury or any other medical diagnosis,

19 such as you testified about some coagulation

20 disorders. Assuming all of those things were

21 testified to and ruled out, your opinion is still at

22 8:41, this child died from asphyxia, and all of these

23 bleeding injuries, whatever they are, were caused by

24 asphyxia?

25 A One preexists, clearly. The subdural -- the chronic

1 subdural hematoma.

2 Q Right.

3 A The small or unquantified amount of subarachnoid  
4 hemorrhage other than focal clearly can result -- can  
5 be the result of cerebral anoxia and cerebral edema.  
6 Subdural hemorrhages may be formed, according to a  
7 2006 study that I told you about on direct, as the  
8 result of increased intracranial pressure from  
9 choking.

10 Q I just want to talk to you about this biomechanic  
11 subject. Are you familiar with Bandak's study?

12 A Yes, I've read Dr. Bandak's study.

13 Q And in fact, Dr. Bandak was the subject of a Daubert  
14 hearing in Kentucky on his biomechanical research.  
15 Are you familiar with that, or had you --

16 A I've never seen any report of Dr. Bandak's Daubert  
17 hearing in Kentucky, no.

18 Q Okay. Well --

19 A I'm aware of Dr. Spivack's Daubert hearing in  
20 Kentucky.

21 Q Are you aware that the mathematical formulas or  
22 calculations which are the underpinnings of Dr.  
23 Bandak's biochemical engineering work in this arena  
24 have been subject to significant attack by his peers?

25 A Yes, I've read a letter to the editor signed by

1 several of his peers.

2 Q Okay. And in your opinion -- because it's my  
3 understanding Dr. Bandak has never, while he may have  
4 responded, revealed his math or the fact that his  
5 peers found a ten percent variance in his mathematical  
6 calculations -- ten times variance, I apologize.

7 A I'm aware that his mathematics have been attacked,  
8 yes.

9 Q And that -- my question is is that he hasn't revealed  
10 this, he hasn't, um, defended himself on this.

11 A Okay.

12 Q Well, does that cause you any pause? I mean, these  
13 are well known biomechanics, well respected in their  
14 field. None of us are biomechanics.

15 A And neither am I. You're asking questions about  
16 Bandak, not me.

17 Q What I'm saying, Doctor, is that you've changed your  
18 entire opinion about inflicted intentional brain  
19 damage to children based on a number of things, one  
20 being biomechanics.

21 A Not --

22 Q And Bandak talks about biomechanics, but his research  
23 has been challenged.

24 A That was Bandak. The one that I believe the most when  
25 I look at it in retrospect is the Duhaime article in

1                   the Journal of Neurosurgery in 1987, which I didn't  
2                   read in 1987, unfortunately. And this was a  
3                   mechanical model, a dummy, if you would like, that she  
4                   constructed in an attempt to see how much -- how much  
5                   forces could be imparted into that biomechanical dummy  
6                   by human beings, and she shook it, and she couldn't  
7                   make the energy necessary to cause what she determined  
8                   with a shake injury. So she recruited the football  
9                   team, and they shook it, and they couldn't make it  
10                  happen. That impressed me.

11                  Q    Yeah. And it was a dummy they were shaking without a  
12                  real brain inside a real skull.

13                  A    Because we can't do that --

14                  Q    That's right.

15                  A    -- to our children, thank you.

16                  Q    Thank you.

17                   Now, I'm getting sort of three areas from you in  
18                   terms of what's changed. The -- the choking asphyxia  
19                   literature, has that really substantially changed in  
20                   the last ten years?

21                  A    That 2006 paper certainly has.

22                  Q    Okay. Give me that again.

23                  A    That would be Geddes in Neuropathology and Applied  
24                   Neurobiology, 2006. This is a computer model study in  
25                   which they looked at the amount of energy that would

1           be made internally in a choking event.

2       Q    Okay. And I'm familiar with some of Ms. Geddes's  
3           research. What I'm particularly familiar with and  
4           wondering if you are as well is her Daubert experience  
5           in Lexington, Kentucky recently.

6                    MR. FINDLEY: Judge, I'd object to any  
7           discussion about Daubert hearings. This isn't a  
8           Daubert state. It has no relevance to our inquiry,  
9           Judge.

10                MS. RUSCH: Judge, if he's basing his opinion on  
11           the reliability of a study, I'm entitled to explore on  
12           cross-examination what his understanding of the  
13           author's position on that paper is now. I don't know  
14           if he knows or not.

15                THE COURT: Yeah, she can ask about his  
16           understanding if it's part of -- if it affects his  
17           opinion. I know we're not a Daubert state through two  
18           vetoes, but we're an attempted Daubert state. We're  
19           not there yet. But I think this goes to his opinions,  
20           and it's fair game, just as it would be for the other  
21           side.

22                BY MS. RUSCH:

23       Q    Are you aware that Ms. Geddes in one such hearing in  
24           Lexington, Kentucky recently conceded that her  
25           research was really hypothetical and that it was not

1                   intended as it was being used, and in fact, by  
2                   concession, it was excluded from evidence? Are you  
3                   aware of Ms. Geddes backing off on her research?

4     A    I have no knowledge at all about what you're talking  
5                   about.

6     Q    Okay. In those biomechanical studies, has anyone  
7                   ever, at least to your knowledge in reading this  
8                   literature, been able to simulate the rotational  
9                   consequence of the human head, especially an infant's  
10                   where I think we all recognize there isn't the  
11                   musculature that there is in adults, rotational impact  
12                   of the acceleration deceleration on the brain?

13    A    Excuse me. Rotational impact due to acceleration and  
14                   deceleration without an impact? I mean, which is it?

15    Q    I'm talking about internal, a rotational acceleration,  
16                   the head being shaken around, and presumably the brain  
17                   moving back and forth in the head.

18    A    Who presumes that?

19    Q    Well, let's just say somebody does it. Let's just say  
20                   somebody takes a baby and the head goes around and  
21                   there's a rotational force. I mean, certainly that  
22                   happens in auto accidents.

23    A    Actually, most auto accidents, it's not rotational.  
24                   Again, it's linear. It's going to be an impact rather  
25                   than a non-striking. If you strike something, that's

1                   where you get hurt in car wrecks.

2           Q    So are you saying that rotational head injuries in  
3                   brain injury cases are -- just don't have a basis?

4           A    No; I did not at all. You asked about me about car  
5                   wrecks, and I told you that in car wrecks, most  
6                   injuries happen when kids get slammed into things.

7           Q    Okay. That's the biomechanical research, and you cite  
8                   Duhaime primarily from 1987.

9           A    No, I said that was the one --

10          Q    -- that started it?

11          A    No. That was the one that convinced me that they were  
12                   on to something.

13          Q    Okay. Well, then who else are we relying on?

14          A    Oh, I've got -- I have three feet of sources of SBS  
15                   literature before and after. I can give you the  
16                   complete bibliography if you'd like. I clearly did  
17                   not bring it.

18          Q    Which -- how about which studies were instrumental in  
19                   the last ten years?

20          A    I cannot give you a recitation of that off the top of  
21                   my head.

22          Q    Moving from biomechanics, is there any medical  
23                   research that you have relied upon in the last ten  
24                   years -- and I think you did cite Geddes, but anyone  
25                   other than Geddes?

1 A Omoya.

2 Q Say -- I'm sorry?

3 A Omoya.

4 Q Could you please spell that?

5 A O-m-o-y-a, paper produced, let's see, in 2002.

6 Q And that has to do with choking asphyxia?

7 A No. It has to do with head injuries in children. I'm  
8 sorry.

9 Q Okay.

10 A With choking asphyxia, I would have to go back and  
11 look at my bibliography.

12 Q Okay. Certainly, the choking asphyxia mechanism was  
13 medical information available in 1996, wasn't it?

14 A Yes. But not the proposed threshold of pressures to  
15 produce intracranial hemorrhage.

16 Q And can you give -- and I apologize if you can't, but,  
17 I mean, we are looking for specifically here  
18 information since 1996 that changed that medical  
19 knowledge.

20 A If this -- if I knew this were to be a Daubertoid  
21 hearing, since we're not a Daubert state, I clearly  
22 would have brought the entire bibliography.

23 Q Sir, I guess I'd like to know what you consider to be  
24 important here. What do you view your role here as  
25 today?

1 A I believe my role here today is to reiterate that I do  
2 not believe that a shaking injury without an impact  
3 can produce significant and lethal neurologic disorder  
4 in a child without cervical spinal injury.

5 Q I have nothing further.

6 THE COURT: Thank you. Mr. Findley.

7 REDIRECT EXAMINATION BY MR. FINDLEY:

8 Q Dr. Nichols, you discussed the article by Dr. Lance  
9 that involved a television that fell on a child?

10 A Yes.

11 Q And apparently produced retinal folds. And so I take  
12 it that that article stands for the proposition that  
13 retinal folds can be caused by a non-shaking impact  
14 injury, is that fair?

15 A Yes.

16 Q Does that article tell you anything about when -- how  
17 soon that impact has to occur before the retinal folds  
18 or unconsciousness occurs, in other words, about  
19 timing?

20 A I'm unaware of that.

21 Q And if it's true that impact can cause retinal folds,  
22 does that mean that there had to be impact in this  
23 case to cause retinal folds?

24 A If that's the only means by which retinal folds can  
25 occur, yes. I don't know that that's been proven.

1 Q When you said the eye did not kill this child, what  
2 did you mean?

3 A Just what I said. The eye, no matter how many times  
4 it's looked at or how it's examined, did not kill this  
5 child. I believe the eye reflects the conditions of  
6 its neighbor, the head and brain.

7 Q And so what that means, I take it, is that the retinal  
8 fold simply means there has been some sort of  
9 incident, whether traumatic or not, that caused brain  
10 injury that included -- that ultimately resulted in  
11 retinal folding, is that correct?

12 A I don't know. There's retinal folds that occur in  
13 this child, apparently. Are they related causally?  
14 Or are they -- is this retinal fold an abnormality  
15 that's acquired secondarily due to disturbances within  
16 the cranium?

17 Q Now, you also testified that one of the things that  
18 changed your mind about how you would have diagnosed  
19 this in 1996 was the fact that you saw the Waunakee  
20 police report that included the information about the  
21 formula and various other indicators of possible  
22 choking?

23 A Correct. Not from the medical record. From other  
24 materials.

25 Q But was it also not part of what changed your mind,

1           was it also not the medical research and literature  
2           that's been developed since 1996 that reveals that  
3           choking can cause the kind of brain injuries and signs  
4           that you see in this case?

5           A    There is indication in the medical literature that  
6           choking can produce cerebral edema and intracranial  
7           hemorrhage.

8           Q    So is that part of what went into your changed opinion  
9           about what would have caused this death in this case?

10          A    Yes. I mean, the real bottom line here is that I  
11          cannot exclude an injury to the child's head, an  
12          impact injury. I cannot tell you that it's a primary  
13          choking event because of with a normal brain resulting  
14          in the brain injuries that we see, or whether this is  
15          secondary to neurologic abnormalities that are ongoing  
16          that causes the child to not feed properly.

17          Q    And if it's secondary to neurological problems that  
18          are ongoing to cause the child to not feed properly,  
19          the indications you have are those are not the result  
20          of impact injury that occurred within the previous  
21          three to six hours or the result of shaking, is that  
22          right?

23          A    You can't have an impact with a shake. By definition,  
24          you can't have an impact with a shake. So shake, in  
25          my opinion, has nothing to do with this.

1 Q Right. I understand.

2 A The impact injury, as I told you, is 24 hours or  
3 greater in existence before the child's death.

4 Q Right. So I'm just trying to get the sequence. One  
5 possibility is the primary factor here is choking,  
6 which led to everything else.

7 A Yes.

8 Q The other is something else going on in the brain that  
9 led to choking which, in turn, entered into sort of a  
10 spiral.

11 A Yes.

12 Q And those other things -- and in that instance, the  
13 choking would be secondary?

14 A Yes.

15 Q And what's primary would be something going on in that  
16 child's head that occurred or originated prior to the  
17 morning of her death?

18 A The primary choking event would be me swallowing water  
19 and --

20 Q I understand.

21 A -- and choking. The secondary event would be me  
22 swallowing water and choking because I had either an  
23 impact injury with ongoing progressive neurologic  
24 abnormalities or some other problem in my brain that  
25 was subdural, related to the chronic subdural

1                   hematoma.

2           Q    So an older hematoma that might have re-bled?

3           A    Correct.

4           Q    So that would be prior to that morning?

5           A    Correct. Those are the secondaries, in all honesty.

6                   Whatever it is, there's something wrong with the  
7                   brain.

8           Q    Right. But that was not something that could have  
9                   been caused by Audrey Edmunds on the morning of this  
10                  child's death.

11           A    I have no idea. The chronic subdural hematoma could  
12                  not have been, obviously.

13           Q    And if it were an impact injury, the only impact  
14                  injury you see is when it's at least 24 hours old?

15           A    From the time of death.

16           Q    Right, which was -- right. I understand.

17           A    Yes.

18           Q    Okay. And you were asked about the implications of  
19                  the fact that her pupils were fixed and dilated. You  
20                  said that that means the brain is seriously injured?

21           A    Yes.

22           Q    Could the brain, the parts of the brain that  
23                  controlled the eyes, if they're fixed and dilated,  
24                  could be seriously injured to the point that they're  
25                  fixed and dilated, and yet the child still be

1       attempting to breathe because the brain stem, which  
2       controls breathing, is not similarly injured at that  
3       point?

4       A    Yes.

5       Q    Is that consistent with your choking scenario?

6       A    Yes.

7       Q    And you said when you were asked she was feeding  
8       earlier that morning, and you said things can change  
9       in an hour and a half?

10      A    Yes.

11      Q    Such as a re-bleed of an old hematoma?

12      A    Yes.

13      Q    Other things?

14      A    Brain swelling for some other reason unrelated, a  
15       medical condition that may be associated with a  
16       febrile event and cerebral edema.

17      Q    There's also some -- you were asked -- it was  
18       suggested that the -- it took three minutes for  
19       Natalie's temperature to fall to 91.7 degrees. Did  
20       you see that in the record here that that was how this  
21       was timed, that it took three minutes for her  
22       temperature?

23      A    I have no idea how that chronology was gathered.

24      Q    Do you see -- I mean, is that in your report  
25       somewhere? I mean, did you see that that was timed to

1                   that degree, that it was -- took only three minutes?

2                   Is that corroborated or supported by the medical  
3                   records you looked at?

4    A   Not that I'm aware of.

5                   MS. RUSCH: If I could, counsel, I concede that  
6                   I believe I said three minutes, and the time was 9:46  
7                   that the temperature was 91.7, and what I was dealing  
8                   with were these 8:41 911 call, 8:44 Chief Roberts'  
9                   arrival. At 9:46, if I could state for the record, I  
10                  think counsel would agree the records reflect the body  
11                  core temperature was 91.7. I apologize for that  
12                  misstatement.

13                  MR. FINDLEY: But we don't have a prior  
14                  temperature reading prior to that.

15                  MS. RUSCH: Correct.

16                  MR. FINDLEY: So we don't know the beginning  
17                  point of when that temperature went down, is that  
18                  correct?

19                  MS. RUSCH: Am I under oath?

20                  DR. NICHOLS: No.

21                  MS. RUSCH: What I referenced was the baby was  
22                  warm to the touch, according to the 911 caller.

23                  MR. FINDLEY: Just warm to the touch. Okay.

24    Q   Doctor, and does "warm to the touch" necessarily mean  
25                  warm to the core?

1 A No. And I'm not too sure that my hand is in  
2 centigrade, in Fahrenheit to assess the temperature.

3 Q There were some questions asked to you about how you  
4 tell when a child is lucid so the child is  
5 experiencing a lucid interval. The testimony at trial  
6 was that the child would be, immediately upon shaking  
7 or impact, would become immediately unconscious,  
8 unresponsive or limp. Given that definition, can you  
9 say that there can be a lucid interval, that is, an  
10 interval after such injury in which a child would not  
11 be necessarily unconscious, unresponsive or limp?

12 A This is global testimony about SBS, not specific in  
13 this case?

14 Q Yes.

15 A Then it's my opinion that the global testimony is  
16 incorrect, that there are lucid intervals described in  
17 the medical literature after blunt force injury to  
18 children that ultimately proves to be fatal.

19 Q There's also some discussion about the confession  
20 literature, the confession cases cited in the SBA  
21 study or literature. Do those confession cases allow  
22 you to conclude or to draw a conclusion to a  
23 reasonable degree of medical certainty that shaking  
24 alone can cause Shaken Baby Syndrome?

25 A No, I put no validity in a confession at all. People

1           confess to strange things all the time and they aren't  
2           guilty of it.

3       Q    So you as a scientist have no way of controlling  
4           whether you're getting accurate data?

5       A    That's correct.

6       Q    And you were also asked about Dr. Bandak's study and  
7           about whether or not that's been criticized.

8       A    There have been -- I've seen one letter to the editor  
9           in the same journal that Dr. Bandak published it in  
10           signed by three or four people.

11      Q    And Dr. Bandak's study was on the biomechanical  
12           process?

13      A    Yes.

14      Q    Does Dr. Bandak's study stand alone?

15      A    No.

16      Q    There also was some testimony about Dr. Duhaime's  
17           study, and apparently -- has that been criticized?

18      A    I don't know. I'd have to go back and look for  
19           letters to the editor.

20      Q    So you didn't rely just on Dr. Bandak or Dr. Duhaime  
21           on a whole host of these studies.

22      A    Yes, I have a stack of papers.

23      Q    And it wasn't just -- your opinions today are not  
24           based just on the biomechanical studies, right?

25      A    No.

1 Q They're also based on newer research showing that a  
2 whole host of other factors besides shaking or impact  
3 can cause edema, subdural hematoma, the whole range of  
4 injuries and signs, including death that we see in  
5 this case?

6 A Yes.

7 Q And you were also asked about Dr. Geddes, and  
8 apparently, the proposition was put to you that  
9 perhaps she had said that her studies were  
10 hypothetical?

11 A I have no information about what Dr. Geddes said to  
12 whom or when or the subject in Lexington, Kentucky.

13 Q In terms of the principles underlying Shaken Baby  
14 Syndrome, would you call those hypothetical?

15 A It was proposed by Dr. Caffey as the theory of shaking  
16 infants, the theory, and as far as I know, there's  
17 only been one study that's ever potentially,  
18 potentially showed that that's correct, and that was  
19 an early Omoya study back in 1968 in which he  
20 basically put an accelerator rocket behind the head of  
21 a little monkey and accelerated it like crazy. His  
22 intention at the time of that paper was not to  
23 evaluate SBS, but to see whether or not you can get  
24 primary brain injury from being rear-ended in a car  
25 wreck.

1 Q And are you aware of a Kentucky case, a Daubert  
2 hearing involving Shaken Baby Syndrome, a recent one?

3 A Yes, in Judge Nicholl's court, with two L's, in  
4 Greenup circuit.

5 Q And what was the outcome of that?

6 MS. RUSCH: I'm going to object as to outside  
7 the scope of cross-examination and relevance at this  
8 point.

9 THE COURT: Well, what's the relevance?

10 MR. FINDLEY: The question was propounded to him  
11 earlier about the effect of the Daubert hearings in  
12 another state and what effect they might have on his  
13 opinion. I'd like to know about the effect of this  
14 Daubert proceeding on his opinion as well.

15 THE COURT: Well, okay. I'll let you do it.

16 It's marginally relevant, I think, on both sides, but  
17 we'll let you explore the opinion. Go ahead.

18 A The opinion of Judge Nicholls reinforced my opinion.

19 Q In what way?

20 A That Shaken Baby Syndrome does not occur.

21 Q And is that because Judge Nicholls excluded reference  
22 to Shaken Baby Syndrome?

23 A Yes.

24 Q Thank you. I have nothing further.

25 THE COURT: Just so we don't spend a lot of time

1 on that, I'm not sure --

2 MS. RUSCH: No, I don't have anything.

3 THE COURT: -- what a judge someplace thought  
4 helps us very much, without knowing everything that -  
5 was presented.

6 Ms. Rusch, any further questions?

7 MS. RUSCH: Thank you, Judge. No, I don't.

8 THE COURT: Any other questions? Will you just  
9 double-check you don't have any exhibits that have an  
10 orange marker on them, just so we don't lose them, or  
11 a pink exhibit sticker.

12 DR. NICHOLS: That's it, sir.

13 THE COURT: Thank you. Have a good trip. I  
14 hope you don't see Detroit.

15 DR. NICHOLS: Am I excused finally?

16 THE COURT: Yes, sir. Thanks.

17 DR. NICHOLS: Thank you.

18 THE COURT: Let's talk about what else we want  
19 to do today. I don't know how you've organized your  
20 case, Mr. Findley. Do you have more witnesses?

21 MR. FINDLEY: I do have more. I can go for a  
22 long time or I can stop when you want me to.

23 THE COURT: Well, we'll take a short break. Let  
24 me check on these other cases, but tell me roughly who  
25 you have left and how long you think they'll be and

1 what you plan for tomorrow.

2 MR. FINDLEY: I have four more witnesses total.

3 THE COURT: Okay.

4 MR. FINDLEY: I have three of them here today,  
5 one arriving tomorrow. I believe that all three of  
6 them are available tomorrow. Am I correct about that?  
7 To the extent needed, all three of them are available  
8 tomorrow. I would hope we could get through at least  
9 one more, 'cause otherwise I'm afraid of what would  
10 happen tomorrow.

11 THE COURT: Are they roughly the same length?

12 MR. FINDLEY: I hope they're going to be  
13 increasingly shorter, but I can't guarantee that.

14 THE COURT: How about from the state's  
15 standpoint? Do you want to take one more witness  
16 today?

17 MS. RUSCH: Well, Judge, I think if it would  
18 assist at all in timing, we could certainly get going  
19 on direct-examination and then maybe assess the time  
20 at that point. At least we could get that far forward  
21 since counsel would like to proceed.

22 THE COURT: Why don't we do that then. Why  
23 don't we take a break till 4:00, and I can check on  
24 these other cases to see if I have to do anything on  
25 those, and then we'll take one more witness. We'll

